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**GOVERNMENT OF NORTHERN IRELAND.
MINISTRY OF AGRICULTURE.**

**THE CARE, MANAGEMENT AND FEEDING OF
THE POULTRY BREEDING STOCK.**

Good breeding stock, properly fed and cared for, is the foundation of successful poultry keeping. The selection of the birds to be used for breeding, and the management and feeding of such birds are, therefore, matters of the greatest possible importance to the poultry keeper. Heretofore, in too many instances, the chief, if not the only concern, of poultry keepers was high egg production; and many of the practices adopted in the general scheme of attaining that end were antagonistic to good management as it relates to the breeding stock. For example, hatching early in the season was, and is, an essential in obtaining good egg production in winter, as early-hatched pullets are the chief producers of winter eggs. But to get eggs for hatching early in the season the mating of immature pullets was often practised, as eggs in sufficient numbers were not available from the older birds. Further, these pullets frequently were fed on [a very stimulating ration to encourage maximum production.

This misinterpretation of the advice to hatch early has, it is believed, been responsible, to a great extent, for the increasing rate of mortality which, in recent years, is being experienced by poultry keepers. Continued breeding from stock which, because of immaturity, was unsuitable for perpetuating the race, was bound ultimately to lead to deterioration in the size, vigour and stamina of the strain, with the inevitable result that illness, disease, derangement and death increased proportionately. There is abundant evidence to show that breeding from immature birds leads to a diminution in the size of the birds of succeeding generations, and that when size diminishes so does vigour and stamina. Poultry keepers should, therefore, realise clearly that if health, vigour, size and stamina are to be preserved, the first essential is the use only of large, mature, healthy and vigorous birds for breeding.

Advice regarding the selection of breeding stock is given in Leaflet No. 29, to which the reader is referred for information relating to that aspect of the problem. In this leaflet are given

hints regarding the proper management of the birds so as to have them laying early in their second and subsequent laying years, the care of mated flocks during the breeding season, and the feeding of birds which are being kept for the production of eggs for hatching.

ENCOURAGING EARLY LAYING IN OLDER BIRDS.

With the development of the heavy-laying capacity in birds which have been selected and bred for several generations for egg production has come, simultaneously, the ability of such birds to continue laying late into the autumn of their pullet year production. In fact, the continuance of laying until autumn and the consequent non-occurrence of the moult until September, or even later, have been regarded as attributes of the good layer. While it is not suggested that it is wrong to regard continued laying and late moulting as undesirable occurrences, it is altogether wrong, from the point of view of preparing birds for breeding, to permit the pullets to continue laying until late autumn in order to determine whether or not they comply with the standards prescribed for good layers. There is nothing to gain and everything to lose by doing so. Many poultry keepers, and particularly those who have pens of pullets at the Laying Tests, make the grave mistake of encouraging the birds, on their return from the Test, to continue laying so as to get spectacular records, with the result that laying continues until October or even November when they moult and do not resume laying until, say, February. Thus, eggs for hatching are not obtainable from them during the early part of the hatching season, and the opportunity of breeding early-hatched cockerels is lost.

This short-sighted policy has been responsible, to some extent, for bringing discredit on Laying Tests, inasmuch as it meant that good birds were still "tired" when eggs for hatching were collected from them, and the cause of the disappointing results, which were sometimes obtained, was attributed to the effect of conditions at the Test, instead of to the fact that the birds were mismanaged after they arrived home from the Test. The good results which were obtained at the Laying Test from pullets bred from copper-ringed hens at the Hillsborough Breeding Station, show that birds which lay well at a Test are in no way impaired as breeders if they are given a good rest before they produce eggs for hatching. The management, during the late summer and autumn, of the birds which are intended for breeding is, therefore, a matter of vital importance to the poultry keeper.

As the time for hatching is put forward, so must the time for all other operations, in order to ensure a normal cycle of events throughout the year. It is the failure to appreciate this

fundamental point in management which has been largely responsible for the rapid deterioration in the quality of the birds in some present-day flocks. If the period of hatching is changed from April to March, from March to February and from February to January, and the period when the resulting pullets are "put off laying" is not changed to a correspondingly early date, it follows that these birds are being expected to lay throughout a period of, at least, three months longer than the normal. This extension of the pullet laying period means that the birds are not in lay again at the time eggs for hatching are required and, accordingly, the birds from the succeeding generation of pullets are called upon to fill requirements for hatching eggs. It is seen, therefore, that early hatching, without altering the rest of the programme, is indirectly the cause of much of the breeding from pullets which is being practised.

Breeding from pullets is not necessary with a properly-planned scheme of management, even though hatching is done early in the season. All that is necessary is to plan the management of the birds during their pullet year so as to ensure that they shall have a good rest during the early autumn and be ready and fit to resume laying in November, December and January, when eggs for hatching are wanted.

PUTTING THE PULLETS OFF LAY AND FORCING THEM TO MOULT.

The secret of getting the two-year-old birds to lay in November, December and January is merely a matter of management. It consists in inducing the pullets to go into a moult during the previous August and early September, so that egg production will cease; and then feeding them properly after moulting is general, so as to get them back into condition for the resumption of laying.

Before a pullet will moult she must be put off lay so that the food will be used for the making of new feathers instead of for the making of eggs. It is only when new feathers begin to grow that the old ones fall out and moulting occurs. Therefore, the forced moult can be divided into three distinct stages, (1) cessation of laying, (2) growing of new feathers, and (3) resumption of laying.

First Stage.—The putting of birds off lay is the hardest task and the method of doing so, which is outlined below, must be persevered with until moulting is general amongst the birds.

During late July, the pullet flock should be culled carefully and the birds which reach the standard for potential breeders, as judged by size, vigour, health, egg production, conformation

and compliance with breed characteristics, taken out of the flock and given a complete change of ground, housing and food. These selected birds should be put out in a field and a portable house provided for them. The house should have a solid floor. During the first stage of the process of inducing a forced moult the birds should be confined in the house for, say, two or three days and kept warm. It is advisable to make a drastic change in the feeding. Mash should not be given, but only a mixture of whole oats and wheat, or oats only. The birds should be made to work for this food by scattering it in loose litter provided in their house. Two feeds of grain daily will suffice, and the quantity given at each meal should be regulated so that the birds are hungry for the next feed.

The object of the foregoing treatment is to remove all the surplus fat from the bodies of the birds and thus to discourage the formation of eggs from materials already stored in their bodies. The feeding and management outlined should be continued until feather dropping is general amongst the birds. Should the onset of moulting be slow, even with the treatment specified, more drastic measures will be necessary. These include the moving of the birds frequently, and confining them closely in their house for further periods, of from one to two days each, after periods of liberty. Epsom salts might be added to the drinking water on two or three occasions weekly. A stock solution of Epsom salts should be made up by dissolving $\frac{1}{2}$ lb. Epsom salts in 1 quart of water and this solution kept in a well-stoppered bottle. One dessertspoonful of the solution to each pint of drinking water is sufficient.

At no time should the birds be allowed to become excessively hungry as this may have injurious effects subsequently.

Second Stage.—When moulting is general, a change may be made in the feeding. One feed of mash may be given daily, in addition to the grain food, and the water supply should not be restricted. The quality of the mash to be fed at this time is important. It should be bulky and not stimulating. A mash such as the following is recommended :—

5 parts bran,
2 „ crushed or ground oats,
2 „ coarse pollard,
1 part maize meal.

(All parts by weight).

The object during the next month or so should be to supply the birds with sufficient food for the making of new feathers while at the same time keeping them in lean, hard condition, free from internal fat.

On ordinary tillage farms, the moulting birds should be placed on the stubble land as soon as it is cleared, as there is no better place for birds which are being prepared for the breeding season. Grain feeding, in most cases, will not be necessary for some time afterwards as the birds will find sufficient grain on the stubbles. The daily feed of mash and the daily supply of drinking water should, however, be continued. The mash may be fed in either a wet or dry state.

When feather growing is seen to be nearly completed, some of the birds should be handled to ascertain their bodily condition. If they appear to be over fat, steps should be taken to reduce their condition by giving them more exercise and making them work harder for their food. It will, however, rarely be found that the birds are too fat at this stage if the management outlined has been followed.

Third Stage.—The final stage of the process is the getting of the moulted and lean birds back into production. They should be moved at this time to the quarters in which they are to remain during the breeding season, as a change at the time they are ready to resume laying is most undesirable. When installed in the breeding quarters, feeding to encourage egg production should begin and should be continued until the birds are back into lay, after which they should be fed as advised on page 8.

Care in feeding is again necessary during the period when the birds are being brought back to lay. This is the time when older birds are very liable to put on internal fat, and, should this occur, the start of laying may be delayed for a considerable time. The birds should, therefore, be handled periodically and, if found to be getting over fat, the proportion of foods, such as maize and maize meal, which encourage fattening, should be reduced.

During this period the ordinary laying mash will be found suitable and the grain mixture may be equal parts of oats, wheat and cracked maize. The prescriptions of suitable laying mash are given in Leaflet No. 3, that of a popular one being—

- 4 parts pollard,
 - 2 „ bran,
 - 2 „ maize meal,
 - 1 part Sussex ground oats
 - 1 „ fish meal, or meat meal.
- (All parts by weight).

The addition of cod liver oil to the mash for the prospective breeders is recommended (see page 7). A suitable proportion of oil is 1 pint to 4 stones of mash.

MANAGEMENT OF BREEDING STOCK.

Mating.—This should be done as early as possible. Opinions differ as to the number of females to each male so as to get best results. Circumstances will determine the number in individual cases. Where single pen mating is practised not more than ten hens of the heavy breeds, or 12 of the light breeds, should be allowed with one male; but in the case of flock mating, where three or more males are being run with a flock of hens, the number to each male may be increased.

If pedigree breeding is not being carried on, the system of changing cockerels on alternate days is worthy of a trial. This system involves the mating of from 20 to 30 hens with two cockerels, each of which is run with the hens on alternate days. This means that only one cockerel is with the flock at any time, while the other is kept apart in a small run.

Range.—Absolute free range is the ideal for the breeding flock. No other conditions can be regarded as equally satisfactory. While it is realised that in the case of pedigree mating, the system of keeping the different pens in separate runs is practically unavoidable on most farms, it must be stated that the system of keeping the breeders in confined runs is one which should not be practised, if the alternative of free range is at all possible.

Where the run system must be adopted, the runs should be large—at least 40 square yards per bird—and the ground should be fresh and clean. Also, the housing accommodation should be correspondingly generous—at least 5 square feet of floor space per bird—and the birds given as much freedom as possible.

Housing.—The portable house has no equal for the breeding pen. Such a house can be moved readily to a fresh portion of the field and thus the birds can enjoy the benefits of absolute free range, which is not possible with a fixed house, even though it gives access to a large field over which the birds can range. About 2 square feet of floor space per bird will be sufficient in the case of portable houses.

Slatted-floor houses are quite satisfactory for breeding stock unless the farm is in a particularly exposed situation; in fact, reports suggest that very good results may be obtained from birds kept in slatted-floor houses. It should be remembered, however, that such houses should be protected against harsh east winds, as otherwise the birds are likely to be too cold, and fertility may be affected.

FEEDING.

It is feared that some poultry keepers regard the breeding stock in the same way as they do the laying flock, namely, as egg-producing machines, and treat all alike in the matter of feeding. This is a grave mistake. Apart from the selection of the birds themselves, there is, nothing more important than the feeding of the birds used for breeding. These birds are being given the responsibility of continuing the race and, accordingly, should receive all the attention possible to enable them to do so in a satisfactory manner. Improper methods of feeding, unsuitable food and incorrect management will not only impair the vigour and stamina of the birds themselves, but will also seriously affect fertility, hatchability and rearability; will even lower the constitution of the birds hatched from their eggs, and leave these birds inherently weak and prone to fall victims to illness and disease.

In the case of breeding stock, the object of the feeder should be to keep the birds in hard, firm condition and not to stimulate them to lay the highest possible number of eggs. Good hard feeding, combined with adequate exercise on free range, will assist in obtaining the result desired by all poultry keepers, namely, fertile eggs which hatch well and give chickens which are hardy, vigorous and thrifty.

There is evidence to suggest that poor hatching, with an unduly high proportion of dead-in-shell, is related to the nature of the feeding given the birds several months previously, and also to the shell texture of the eggs. A lack of Vitamins in the diet of the breeding stock will likely lead to poor hatches and it is a wise precaution, therefore, to add 2 per cent. (1 pint to 4 stones) of a good grade of cod liver oil to the mash mixture during the autumn and winter. Besides supplying Vitamins, the cod liver oil assists indirectly in the assimilation of minerals and, accordingly, may help in obtaining good texture of shell.

It has been shown that the use of milk in the feeding of the breeding stock is of particular value in obtaining improved fertility and strong germs.

The feeding of breeding stock with a diet which is too stimulating is a mistake. In no case should the proportion of fish meal or other protein supplement exceed 10 per cent. of the meal mixture; and if milk is available the protein supplement should be omitted altogether.

It is realised that where heavy orders for hatching eggs are received there is a temptation to encourage the birds to increase production by forcing feeding and also to mate some pullets,

so as to be able to fill the orders. This policy is a short-sighted one and should not be practised by any poultry keeper who wishes to retain his reputation. It is far better for the individual, as well as for the industry generally, to avoid extremes and to take every precaution to distribute only such hatching eggs as will be likely to give satisfaction.

Just as 50 well-selected breeding hens will do more credit to their owner than double that number, if the other 50 are of poor quality, so in the case of eggs for hatching, it is far better to be content with average production than excessive production brought about by irrational methods, such as forcing either by over-stimulating food or by artificial lighting.

Stinted or incomplete feeding of the breeding birds is as bad as the other extreme. It should be remembered that the nutrition of the chick begins before the egg from which it is hatched is laid and that, accordingly, if the parents are ill-nourished the offspring are bound to be affected adversely.

The main principles governing the feeding and management of breeding stock are those which provide for the birds all the nutrients required for normal health and well-being, and at the same time give them conditions of life which approach as near as possible to those intended by nature. Therefore, adequate housing accommodation and free range on fresh land are the ideal and are nothing more than the birds' rightful due.

The following are types of meal mixtures which should prove satisfactory for breeding stock:—

- (1) 4 parts by weight bran,
 2 " " " pollard,
 2 " " " maize meal,
 1 " " " Sussex ground oats,
 1 " " " fish meal, or meat meal.
- (2) 3 parts by weight bran,
 2 " " " pollard,
 2 " " " ground wheat,
 2 " " " maize meal,
 1 " " " fish meal, or meat meal.
- (3) 4 parts by weight bran,
 4 " " " pollard,
 2 " " " maize meal,
 1 " " " fish meal, or meat meal.

In each case 1 pint of cod liver oil of a good grade should be mixed thoroughly with each 4 stones of mash. If milk is available the fish meal or meat meal should be omitted,

These mashers may be fed either in the wet or dry state, but for breeding stock, wet mash is to be preferred to dry. If dry mash is supplied in addition to wet mash, the hoppers should be closed during the forenoon and the birds allowed access to the dry mash only for a few hours in the afternoon. One feed of wet mash daily, given at mid-day is adequate.

A grain mixture, consisting of equal parts of good oats, cracked maize and wheat should be fed liberally. One feed of grain should be given in the litter in the morning and a second small feed in troughs in the late evening.

Fresh green food and a constant supply of oyster shell and limestone grit are essential, as is a continuous supply of fresh clean water. On no account should breeding birds be left without fresh green food. If, as is necessary for best results, the birds are ranging on pasture land they will obtain a certain amount of their green food requirements themselves; but, as during the winter months pasture is deficient in the nutrients supplied by fresh green food, it should be supplemented with cabbage, turnip tops or kale.

EGG PRODUCTION FROM THE BREEDING FLOCK.

The mistake is sometimes made of culling out very good breeding birds because it is thought they are not laying sufficiently well during the breeding season. This is not necessarily a fault, or proof that they are not good layers. If they laid well in their pullet year they may be assumed to possess the factors for good egg production and, accordingly, will be as likely to breed good layers as those which may be laying better during their second and subsequent years; further, these proved breeders are far less of a gamble than those which have not been proved from the standpoint of breeding.

The value of a hen as a breeder should not be judged by the number of eggs which she may lay in her second and third years, but by the number and the quality of the chickens reared from her eggs.

POINTS TO NOTE, REMEMBER AND PRACTISE.

1. Test the selected pullets for egg production, vigour, stamina and the ability to live as well as lay, before entrusting them with the responsibility of breeding.
2. Never breed from pullets.
3. Use only male birds which are from long-lived families, the sons of old hens, and which themselves are mature, vigorous and constitutionally sound.
4. Give the hens intended for breeding a good rest from laying before the breeding season begins. Do not put a higher value on the eggs birds may lay in August and September than on the eggs they should be laying in December, January and February. If you do, you will have very few eggs for hatching from the older birds, which are the proper ones from which to breed.
5. Run the breeding flock on free range, even though this may mean extra labour and require extra accommodation. Confined runs are a poor substitute for free range.
6. House the breeding flock in a portable house, and do not forget that a portable house is no better than a fixed one unless it is moved regularly to fresh ground.
7. Feed for health and hardiness and not for fatness or spectacular egg production. Remember that the feeding of the chicken begins before the egg from which it hatches is laid.
8. Never attempt to stimulate high egg production from the breeding hens either by forced feeding or by artificial lighting.
9. A bad bird cannot breed a good one. A weakly bird cannot transmit vigour to her offspring, and it would be to the advantage of the poultry industry if she died before being allowed to produce offspring. Poultry keepers will only be helping themselves if they see that such birds are not included in their breeding pens.
10. Good egg records in the absence of strong, vigorous birds are a delusion and a temptation. Do not be deluded or tempted. Select first the birds, and then, but not till then, consider their egg records.

MINISTRY OF AGRICULTURE,
STORMONT, BELFAST.

March, 1936.

Copies of leaflets may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast. Letters so addressed need not be stamped.

LEAFLET No. 44.

(Revised 1936).

GOVERNMENT OF NORTHERN IRELAND.

MINISTRY OF AGRICULTURE.

RESULTS OF CROP EXPERIMENTS, 1935.

During the year 1935 various field experiments were conducted in the different counties. These included (a) tests designed to ascertain the cropping capacity and suitability for Northern Ireland of certain varieties of oats, wheat, barley and potatoes; (b) tests designed to investigate problems concerning the manuring of oats and potatoes, and (c) tests to determine the value of dressing seed oats with fungicides before sowing. The summarised results of these tests, together, in some cases, with those from corresponding tests carried out during previous years, are given in this leaflet.

The detailed results of all the experiments carried out by the Agricultural Instructors in 1935, both with crops and with live stock, will be found in the Annual Reports published by the respective County Committees of Agriculture and obtainable free on request from the Secretaries of these bodies.

OAT VARIETY TESTS.

Two series of tests were arranged. In one series, certain varieties which were considered suitable for the better classes of soils were tested under comparable conditions, while in the other series, varieties which suit the poorer soils in hilly districts were included.

Varieties suitable for good soils :—For this series of tests, seven varieties were specified and a selection was made from these seven for each test centre. The varieties included those which in previous trials had given the most promising results, and also new varieties and strains, some of which were produced at the Ministry's Plant Breeding Station. The names of the varieties, and the yields of grain and straw produced by each at the different centres, are given in Table 1.

TABLE 1.—YIELDS PER STATUTE ACRE.

DISTRICT.	KING.		CROWN.		STORMONT ARROW.		McGILL- SMITH POTATO.		UTILITY.		ELDER.		STORMONT IRIS.	
	Grain	Straw	Grain	Straw	Grain	Straw	Grain	Straw	Grain	Straw	Grain	Straw	Grain	Straw
* { Craigs, Ballymena 1 { Ligoniel	c.	qr.	cwt.	c.	qr.	cwt.	c.	qr.	cwt.	c.	qr.	cwt.	c.	qr.
	20	0	28	24	2	28	23	2	35	22	0	37	—	—
2 Portadown ..	—	—	—	21	2	45	20	3	46	19	1	31	30	0
	22	3	29	26	0	31	27	2	32	—	—	—	—	—
3 { Loughinisland 3 { Clough	13	3	21	16	0	22	16	3	25	—	—	—	—	—
	34	0	29	31	2	26	32	0	28	29	2	32	—	—
4 Castledawson ..	23	2	25	22	1	23	21	1	21	19	1	27	—	—
	—	—	—	29	2	35	35	2	41	31	0	43	—	—
5 { Victoria Bridge .. 5 { Omagh Moy	—	—	—	40	1	42	42	0	41	41	1	40	—	—
	19	0	26	21	3	27	20	1	25	—	—	—	—	—
AVERAGES : 8 centres ..	—	—	—	26	2	31	27	2	34	—	—	—	—	—
	22	1	26	23	3	26	23	2	28	—	—	—	—	—
6 centres ..	—	—	—	28	1	33	29	1	35	25	1	35	—	—
	—	—	—	30	3	43	31	1	43	26	0	36	35	2
2 centres ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Counties : 1 Antrim, 2 Armagh, 3 Down, 4 Londonderry, 5 Tyrone.

Since the seven varieties were not included at all centres, it is impossible to give the average yields in respect of all varieties at all centres, but the averages have been determined for groups of varieties which were represented at the numbers of centres indicated at the foot of the table. For example, Crown, Stormont Arrow and McGillsmith Potato were each included at 8 centres, and the average yields produced by these three varieties at these centres are given in line 1 of the averages at the foot of the table. Again, King, Crown, Stormont Arrow and McGillsmith Potato, were each included at 6 centres, and the average yields produced by these varieties at these centres are given in line 2 of the averages, and so on.

When these averages are examined, it will be observed that Stormont Arrow has given consistently high yields, and, at most of the centres, proved to be superior to other varieties. This oat was raised at the Ministry's Plant Breeding Station from a cross between Black Potato and Victory. It has short, stiff straw and is not so liable to lodge as other varieties.

Crown has also given yields almost equal to those obtained from Stormont Arrow. This variety can be relied on to produce heavy yields of grain when grown on the better classes of soils. King is a further variety which will produce satisfactory crops on land in good condition.

Stormont Iris is a new variety, produced at the Ministry's Plant Breeding Station from a cross between Supreme and Victory. It ripens early and for that reason is very suitable for late districts. At the two centres where it was included in these trials, it gave yields which were superior to those given by the other varieties with which it was compared.

The remaining varieties in these tests were of the Potato type, and the yields obtained, although satisfactory, were considerably lower, in most cases, than those from the varieties mentioned above. While the merits of the Potato oat are well known, it is now recognised that heavier yields of grain can be obtained from some of the newer varieties when grown under suitable conditions.

Farmers should consult the Agricultural Instructor, if advice is desired as to the most suitable varieties for any particular district or soil.

Varieties suitable for poorer soils in hilly districts :—In the second series of trials, the object was to obtain information as to the cropping capabilities of some of the varieties likely to succeed best when grown on the poorer soils in mountainous districts.

The six varieties prescribed included a new oat raised at the Ministry's Plant Breeding Station from a cross between Potato and Sandy, known as Stormont Kern, and a selection of a short-grained type of Tyrone Tawny, made and bulked at the Plant Breeding Station. A selection of Sandy, called Gordon Sandy, and of Poland, along with the varieties Utility and McGillsmith Potato, were included.

As in the case of the first series of trials, it is not possible to give average returns for each variety from all centres, since all six varieties were not included at each. In Table 2, the individual returns from each centre are tabulated, and in the averages at the foot of the table, are given the average yields in respect of groups of varieties which were included at the respective numbers of centres stated.

A study of the averages at the bottom of Table 2 will assist in comparing the yielding capacity of the different varieties.

The new variety Stormont Kern gave very promising results in the two previous years' trials and again in this year's tests. It will be seen that the average yield of grain was, in most cases, superior to that obtained from the other varieties.

Poland gave consistently high yields in these trials, and at the five centres where all varieties were included, the average yield obtained from it equalled that of Stormont Kern. This variety is useful in exposed situations and in poor cultural conditions generally. It is, however, late in ripening. As Stormont Kern ripens earlier than Poland, it may prove to be valuable as a substitute for Poland in districts where that variety is widely grown.

Gordon Sandy has given good yields in previous trials and also in the present series, where it gave an average yield of grain, at the five centres at which all varieties were grown, greater than McGillsmith Potato and equal to Utility, which is a selection of Potato.

The average yield obtained from the short-grained Tyrone Tawny was lower than those obtained from the other varieties. This variety is, however, very useful for growing in poor soils and is characterised by great stooling capacity. The grain is shorter and plumper than that of the ordinary Tawny in cultivation.

TABLE 2.—YIELDS PER STATUTE ACRE.

DISTRICT.	MCGILL-SMITH POTATO.				UTILITY.				SHORT-GRAINED TYRONE TAWNY.				GORDON SANDY.				STORMONT KERN.				POLAND.			
	Grain		Straw		Grain		Straw		Grain		Straw		Grain		Straw		Grain		Straw		Grain		Straw	
* {Larne .. 1 {Armagh ..	c.	qr.	cwt.		c.	qr.	cwt.		c.	qr.	cwt.		c.	qr.	cwt.		c.	qr.	cwt.		c.	qr.	cwt.	
	21	3	52	0	24	0	48		23	0	50		22	2	52		26	3	52		24	3	56	
	14	0	37		20	0	40		16	0	42		20	1	43		15	3	36		16	2	45	
2 Gladmiltown ..	22	3	31		20	3	26		17	2	25		21	1	33		21	2	21		19	3	25	
3 {Newry .. {Dromara ..	14	0	26		17	3	24		—	—	—		17	3	30		20	1	28		19	3	32	
	21	1	35		25	1	36		—	—	—		26	2	43		29	1	38		25	0	33	
4 Lisbellaw ..	14	2	—		9	0	—		12	3	—		11	0	—		13	0	—		13	3	—	
5 {Swatragh .. {Claudy .. {Portlengone ..	17	0	31		—	—	—		16	1	26		16	3	29		17	2	28		15	1	27	
	18	2	22		—	—	—		17	2	25		17	2	26		19	2	27		21	0	31	
	25	0	46		—	—	—		17	2	22		19	3	33		25	1	34		18	1	28	
6 {Carrickmore .. {Pomeroy .. {Drumquin ..	13	3	36		13	2	34		12	3	30		12	3	32		14	2	40		16	1	48	
	—	—	—		13	3	36		16	1	33		12	2	30		16	0	41		15	3	36	
	14	0	22		16	2	18		14	1	23		18	0	25		18	0	23		—	—	—	
AVERAGES:																								
8 centres ..	18	2	36		—	—	—		16	3	31		17	3	35		19	1	34		18	1	37	
5 centres ..	17	2	36		18	2	35		—	—	—		18	3	39		20	1	36		19	1	40	
5 centres ..	17	1	39		17	2	37		16	2	37		17	2	40		18	1	37		18	1	43	

* Counties: 1 Antrim, 2 Armagh, 3 Down, 4 Fermanagh, 5 Londonderry, 6 Tyrone.

Oat Extension Plots :—As in previous years, quantities of specially selected seed oats were grown in 1935 at centres in the different counties under the supervision of the Agricultural Instructors. The varieties grown were as follows :—King, Crown, Victory, Stormont Arrow, Stormont Iris, Eagle, Utility, Stormont Kern, Gordon Sandy, Stormont Poland, and Short-grained Tyrone Tawny. The names and addresses of the farmers with whom the plots were located may be seen in the "Guide to the Cereal, Flax and Potato Experimental Plots" (free on request from the Ministry) or they may be had on application to the Agricultural Instructor.

The produce of these plots is available at a reasonable price to farmers for sowing in 1936. Those desiring a change of seed oats, or wishing to test one or more of these varieties on their farms, are advised to avail of this opportunity of obtaining supplies of pure seed. As the quantities of seed from these extension plots are strictly limited, early application for supplies should be made to the County Agricultural Instructor, who will advise in regard to the most suitable varieties and assist in obtaining supplies of seed.

OAT MANURIAL TESTS.

The object of these tests was to ascertain the effects, both as regards yield and the prevention of lodging, of superphosphate alone and of superphosphate in conjunction with potash, on oats grown after wild white clover lea. The trials have been conducted during the past three years, and the average yields obtained from each year's trials, along with the true average results in respect of all the tests, are given in Table 3.

TABLE 3.—AVERAGE YIELDS PER STATUTE ACRE.

Treatment.	Year 1935		Year 1934		Year 1933		True Average 1933 to 1935	
	(2 centres)		(3 centres)		(4 centres)		(9 centres)	
	Grain	Straw	Grain	Straw	Grain	Straw	Grain	Straw
	c. qr.	cwt.	c. qr.	cwt.	c. qr.	cwt.	c. qr.	cwt.
No Manure ..	29 1	41	20 1	36	12 0	39	18 2	38
2 cwt. Superphosphate per statute acre	34 1	47	22 2	37	15 1	38	21 3	40
2 cwt. Superphosphate and 1 cwt. 30 per cent. Potash Salts per statute acre	34 2	41	23 2	41	15 3	44	22 2	42

These results indicate that, even in the case of oats following wild white clover leas, it is an advantage, from the point of view of obtaining good yields, to apply artificial manures. Taking the average results from the nine tests, it is seen that the application of superphosphate alone gave an increased yield of over 3 cwt. of grain per statute acre, as compared with the unmanured plot, while the addition of the potash salts to the superphosphate gave a further increase of almost 1 cwt. per acre in the yield of grain.

As weather conditions in 1935 were favourable for the production of good standing crops of oats, none of the crops on the plots lodged at the two centres where the trials were carried out last year. In previous years' trials, however, observations prior to harvesting led to the conclusion that the intensity of lodging was greatest in the crop grown on the unmanured plot. In all the trials, the crops on both the manured plots ripened about a week earlier than that on the unmanured plot.

DRESSING OF SEED OATS TESTS.

These tests, which were first carried out in the different counties in 1931, were laid down with the object of ascertaining the value of dressing seed oats previous to sowing with an organic mercury dust, as a preventive against smut and other cereal diseases. In the first year's tests, "Ceresan" was the mercurial compound used, and both the treated and the untreated seed was sown at the same rate. But, as it was observed that there was a much thicker braird from the treated seed than from the untreated, it was argued that a reduction in the rate of seeding might profitably be made when dressed seed was being sown; accordingly, in the trials carried out in 1932, the dressed seed was sown at a lighter rate per acre than the undressed seed. Where the usual rate of seeding for the district was 16 stones per statute acre, the dressed seed was sown at the rate of 13 stones per acre, while the undressed seed was sown at the normal rate of seeding. At most centres a third plot, sown with dressed seed at the normal rate of seeding, was also included.

The average results from the tests carried out in 1932 and 1933 at 20 centres showed that an increased yield of 1 cwt. 1 qr. of grain per statute acre was obtained from the plots sown with seed treated with "Ceresan," as compared with the yield from the untreated seed; also that the yield from the treated seed sown at 13 stones per acre was exactly similar to that from the treated seed sown at the rate of 16 stones per acre.

In the 1933 tests, a mercurial compound of similar nature to "Ceresan," and sold under the name of "Agrosan G," was included for the first time. This material gave very promising results, and, accordingly, plots sown with seed dressed with it were included in all the tests carried out in 1934 and again in

1935. In both these years' tests, the seed dressed with "Agrosan G" was sown on one plot at the normal rate and on another at the reduced rate, while in the case of "Ceresan" the seed was sown only at the reduced rate. Generally, the normal rate of seeding in these tests was 16 stones of seed per statute acre and the reduced rate 13 stones.

The reports in respect of the individual centres varied somewhat regarding the difference in the quality of the brairds from the treated and the untreated seed, respectively, but in general they indicated that the brairds produced by the dressed seed were thicker and of a more vigorous appearance than those from the untreated seed.

The produce on the plots was harvested separately and the yields of grain and straw obtained from the respective plots. The average yields per statute acre from the tests in 1935 and 1934, respectively, along with the true average yield in respect of both years' experiments, are given in Table 4.

TABLE 4.—AVERAGE YIELDS PER STATUTE ACRE.

Treatment.	Year 1935 (6 centres)		Year 1934 (10 centres)		True Average for 1934 and 1935 (16 centres)	
	Grain	Straw	Grain	Straw	Grain	Straw
	c. qr.	cwt.	c. qr.	cwt.	c. qr.	cwt.
Seed untreated (normal rate of seeding) ..	19 3	43	21 1	35	20 3	38
Seed dressed with "Agrosan G" (normal rate of seeding)	19 3	43	22 3	37	21 3	39
Seed dressed with "Agrosan G" (reduced rate of seeding)	21 1	43	23 2	38	22 3	40
Seed dressed with "Ceresan" (reduced rate of seeding)	20 1	42	23 3	36	22 2	38

As regards crop yields, there is an average increase of 1 cwt. of grain and of 1 cwt. of straw per statute acre from the seed treated with "Agrosan G" and sown at the normal rate, as compared with the untreated seed in the two years' tests. A reduction in the rate of sowing of the treated seed gave a further increase of 1 cwt. of grain and of 1 cwt. of straw per statute acre. The average results in the two years' tests, obtained from the seed dressed with "Ceresan" and sown at the reduced rate, were practically the same as those from the seed dressed with "Agrosan G" and sown at the same rate.

It is seen that seed dressed with either of these materials gave increased yields as compared with untreated seed of the same variety, and the results also indicate that a reduction in the rate of seeding may be made when the seed is dressed prior to sowing.

Further, treatment of the seed with "Ceresan" or "Agrosan G" is claimed to prevent smut, leaf stripe and other seed-borne diseases from appearing in the crop. On account of the nature of the seasons, however, little opportunity was provided by these experiments to test this claim, as no disease was apparent, even in the plots sown with untreated seed. It should be noted, however, that these materials have been found to be of definite value in preventing diseases, and, accordingly, farmers who have any doubt regarding the complete freedom from disease of the seed they propose to sow, should take the precaution of dressing it before sowing.

These mercurial compounds are equally useful for dressing seed wheat and barley. The usual quantity of the material to use is from 5 to 8 oz. per cwt. of seed.

WHEAT VARIETY TESTS.

Tests to compare certain autumn varieties of wheat were carried out at 10 centres. Six varieties, including a new one called Redman, which had not been previously included in the trials, were under test, and the results obtained are given in Table 5. Since all six varieties were grown only at 8 centres, the average results from these centres are given in the Table. For comparison, the average yields of the tests carried out in 1934 and in 1933 are also given, along with the true average yields in respect of the three years' tests.

TABLE 5.—AVERAGE YIELDS PER STATUTE ACRE.

Variety.	Average Yields in 1935 (8 centres)		Average Yields in 1934 (8 centres)		Average Yields in 1933 (7 centres)		True Average Yields, 1933-1935. (23 centres)	
	Grain	Straw	Grain	Straw	Grain	Straw	Grain	Straw
	c. qr.	cwt.	c. qr.	cwt.	c. qr.	cwt.	c. qr.	cwt.
Queen Wilhelmina	25 3	34	29 1	44	28 3	44	28 0	41
Victor	24 0	32	25 0	38	26 0	41	25 0	37
Yeoman II. ..	21 3	31	28 3	43	22 3	36	24 2	37
Squarehead's Master ..	23 0	34	26 2	40	23 0	38	24 1	37
No. 60 (Gartons)	22 0	31	24 2	40	22 0	35	22 3	35
Redman ..	22 3	31	— —	—	— —	—	— —	—

It will be noted that the variety Queen Wilhelmina gave the highest average yield of both grain and straw in the three years' trials. This is one of the most prolific varieties of wheat in general cultivation, producing a large, plump, white grain, with long straw of moderate strength. It can be relied on to give high yields when grown on the better classes of soils.

In the 1935 trials and in the average of the three years' tests, Victor gave yields second to Queen Wilhelmina. This variety produces a good sample of small, thin-hulled grain, and straw of moderate length which stands well.

Yeoman II, which is an improved type of the variety Yeoman, has given average yields not far behind those from Victor. Both Yeoman II and Victor are suitable for growing on the stronger and richer types of soils where there is a danger of other varieties lodging.

Squarehead's Master has given consistently good average yields in all the trials carried out. This is a well-known and popular variety that can be depended on to produce satisfactory crops under a wide range of soil conditions.

The results indicate generally that satisfactory crops of wheat can be grown in Northern Ireland.

BARLEY VARIETY TESTS.

Barley meal is an ideal food for pigs, and its inclusion in the rations fed to the finishing stage encourages the production of bacon of good quality having white, firm fat. In the production of bacon pigs of the quality specified by modern requirements, barley meal has probably no equal amongst the range of foods available and suitable for pig-feeding.

The cultivation of barley has not, in the past, been practised extensively in Northern Ireland, except in particular districts where there was a demand for barley for malting. With the recent expansion in the pig industry the growing of barley has assumed a role of major importance, since the use of barley meal in pig rations has become more general than formerly and since the greater part of the barley meal so used is made from imported barley, which is usually more expensive than would be the case if the barley were grown on the home farm. It is obvious, therefore, that if satisfactory crops of barley could be grown generally in Northern Ireland and the produce fed to pigs, the

cost of producing bacon pigs would be reduced and at the same time the difficulties of obtaining carcasses of the quality desired would be lessened.

With these considerations in mind, the Ministry is encouraging an extension in the area under barley, and, through the medium of the Agricultural Instructors, employed by County Committees of Agriculture, experiments and demonstrations designed to obtain information regarding varieties, and other matters connected with barley growing, were carried out in 1935.

In the case of the variety experiments, three different varieties were compared at each of 8 centres throughout Northern Ireland, and the results obtained are shown in Table 6.

TABLE 6.—YIELDS PER STATUTE ACRE.

County	No. of Centres	Spratt-Archer			Old Common (Chevalier)			Golden Archer		
		Grain		Straw	Grain		Straw	Grain		Straw
		c.	qr.	cwt.	c.	qr.	cwt.	c.	qr.	cwt.
Antrim ..	1	19	1	37	22	2	35	26	1	47
Armagh ...	1	28	0	34	28	1	35	29	2	33
Down ..	2	24	0	27	23	0	24	24	2	29
Fermanagh ..	1	18	0	26	13	1	24	15	2	22
Londonderry	1	36	2	43	28	0	41	35	2	40
Tyrone ..	2	22	1	43	19	3	30	21	2	40
Average Yields (8 centres)		24	1	34	22	1	30	24	3	34

It will be seen that in all the counties good crops were obtained, and that the average yields from the 8 centres were very satisfactory. Golden Archer gave slightly the highest average yield of grain. This variety is of comparatively recent introduction and closely resembles Spratt-Archer. Both Golden Archer and Spratt-Archer have strong straw, which is fairly resistant to lodging, and are suitable for cultivation on the heavier types of soil in good condition. Old Common or Chevalier has also given a satisfactory average yield. This is an old-established variety having long, slender straw and is best suited for growing on the lighter classes of soils. It ripens earlier than other varieties, and for that reason is most suitable for the later districts.

Under suitable conditions, good crops of barley can be grown in Northern Ireland, and farmers, particularly those engaged in pig-keeping, are recommended to sow even a small average of this crop and so reduce the expenditure on purchased feeding stuffs.

Barley is best grown after potatoes or turnips, and, on such ground, manuring is not necessary. Early sowing gives best results; the most satisfactory crops in these trials were those which were sown not later than the first week of April. A seeding at the rate of about 16 stones per statute acre is suitable.

Further information relating to barley growing can be obtained either from the Ministry or from the Instructor in Agriculture, who will visit and advise on request.

POTATO VARIETY TESTS.

The main object of these tests was to ascertain the cropping capabilities and suitability of some of the newer varieties as compared with some of the older and proved varieties. Two series of tests were carried out, one with main crop varieties and the other with early varieties.

Main crop varieties :—The tests with main crop varieties were carried out in 1935 at 11 centres in non-scheduled districts by the Agricultural Instructors, and at 10 centres by Potato Inspectors. The latter tests were placed in scheduled areas where the "Black Scab" in potatoes Orders are in operation. In the tests in the non-scheduled districts, Up-to-date and Kerr's Pink were the standard varieties, but in those in the scheduled areas Up-to-date was not included, as it is a non-immune variety. The average results obtained from these tests, along with those from the 1934 trials, are given in Table 7. The true average yields in respect of 41 centres from both years' tests are also given in the table.

It will be noted that the variety Majestic gave the highest average yield, and was closely followed by Arran Cairn. The latter is an immune variety of the Up-to-date type, with strong, vigorous foliage, and is late in ripening. Both Majestic and Arran Cairn gave yields which were considerably higher than those obtained from either Up-to-date or Kerr's Pink. The new variety, Gladstone, was included for the first time in the 1935 tests carried out in the scheduled areas. This is an early main crop variety, with kidney-shaped tubers which closely resemble those of the non-immune King Edward variety, a variety which Gladstone may prove suitable for replacing.

TABLE 7.—AVERAGE YIELDS PER STATUTE ACRE.

Variety.	Year 1935						Year 1934		True Average Yields 1934 and 1935 (41 centres)	
	Non-scheduled Areas (11 centres)			Scheduled Areas (10 centres)			Both Areas (21 centres)		Both Areas (20 centres)	
	Ware and Seed			Ware and Seed			Ware and Seed		Ware and Seed	
	T.	C.	Total	T.	C.	Total	T.	C.	T.	C.
Majestic ..	16	17	17	17	15	17	16	17	18	17
Arran Cairn ..	17	5	18	19	2	18	17	16	17	16
Arran Consul ..	15	12	16	19	12	15	15	11	15	8
Arran Victory ..	14	17	15	4	16	15	14	14	15	17
Dunbar Cavalier ..	14	10	15	16	2	14	13	15	14	1
Kerr's Pink ..	14	15	15	4	17	15	9	16	10	—
Up-to-date ..	15	13	17	13	—	—	—	—	—	—
Arran Banner ..	—	—	—	—	17	9	—	—	—	—
Gladstone ..	—	—	—	—	15	2	—	—	—	—

Early Varieties :—The trials with early varieties were carried out at 17 centres by the Agricultural and Horticultural Instructors. The varieties included in the 1934 year's tests were again specified for testing, and the average results obtained from all 17 centres are given in Table 8. For comparison purposes, the average yields from last year's trials are also included in the table, along with the true average yields of both years' tests.

TABLE 8.—AVERAGE YIELDS PER STATUTE ACRE.

Variety.	1935 (17 centres)				1934 (11 centres)				True Average 1935 and 1934 (28 centres)			
	Ware and Seed		Total		Ware and Seed		Total		Ware and Seed		Total	
	T. 9	C. 12	T. 10	C. 17	T. 11	C. 10	T. 12	C. 11	T. 10	C. 7	T. 11	C. 10
Dunbar Yeoman												
British Queen ..	9	14	11	4	10	2	11	3	9	17	11	4
Arran Pilot ..	9	9	10	10	9	15	11	5	9	11	10	16
Ballydoon ..	9	9	10	5	10	3	11	2	9	15	10	12
Di Vernon ..	8	19	10	7	9	3	10	10	9	1	10	8
May Queen ..	9	1	10	1	8	2	9	4	8	13	9	17

It will be observed that the variety Dunbar Yeoman gave the highest average yield in both years' trials, and was closely followed by British Queen. Dunbar Yeoman is a first early immune variety, with tubers having lemon-coloured flesh and of good eating quality. Arran Pilot and Ballydoon gave an almost similar average yield for both years' tests. Both are immune varieties and Ballydoon is very similar in appearance to the non-immune British Queen, which it can replace. Arran Pilot is one of the earliest varieties of the May Queen type in cultivation. The tubers are long-shaped and are very suitable for meeting the requirements of the English market.

Further information and descriptive notes relating to the newer varieties which were included in both these series of trials and also in the tests carried out at the North-West School, Strabane, and at Stormont, are given in Leaflet No. 7, copies of which may be had free on request from the Ministry. This leaflet also contains information regarding Black Scab or "wart" disease of potatoes, particulars of the inspection and certification of growing crops of potatoes, and useful hints on the maintenance of purity and vigour in stocks of potatoes.

POTATO MANURIAL TEST (SEE NEXT PAGE).

TABLE 9.—AVERAGE YIELDS PER STATUTE ACRE.

	Plot 1—Manured with standard mixture, pre- pared on day of appli- cation, at the rate of 6 cwt. per statute acre.			Plot 2—Manured with standard mixture, pre- pared at least 3 weeks prior to application, at the rate of 6 cwt. per statute acre.			Plot 3—Manured with 3 cwt. I.C.I. No. 5 con- centrated fertiliser per statute acre.			Plot 4—Manured with special potato manure of same analysis as standard mixture, at the rate of 6 cwt. per statute acre.		
	Ware and Seed		Total	Ware and Seed		Total	Ware and Seed		Total	Ware and Seed		Total
	T.	C.	T. C.	T.	C.	T. C.	T.	C.	T. C.	T.	C.	T. C.
Average yields in 1935 from 7 centres	15	12	16	15	10	16	14	16	15	14	18	15
Average yields in 1934 from 11 centres	13	8	14	13	5	14	13	7	14	13	8	14
Average yields in 1933 from 13 centres	11	9	12	11	10	12	11	5	12	—	—	—
Average yield in 1932 from 14 centres	13	9	14	13	6	14	—	—	—	13	1	13
Average yields in 1931 from 10 centres	10	11	11	10	17	11	—	—	—	10	15	11
True Averages 1931 to 1934.	12	14	13	12	14	13	—	—	—	—	—	—
55 centres for Plots 1 and 2	13	2	13	13	1	13	—	—	—	12	18	13
42 centres for Plots 1, 2 and 4	13	2	14	13	1	13	12	16	13	—	—	14
31 centres for Plots 1, 2 and 3	14	5	15	14	2	15	15	2	14	14	0	14
18 centres for all Plots ..												17

POTATO MANURIAL TEST.

This test, which had been conducted in previous years, was designed to determine if the individual manures comprising the standard mixture for potatoes, namely 1 cwt. sulphate of ammonia, 4 cwt. superphosphate and 1 cwt. muriate of potash, could be mixed and stored some time prior to use without impairing the efficiency of the mixture.

In the 1931 and 1932 trials, a third plot was included to compare the standard mixture with ready-mixed special potato manure having the same analysis as the standard mixture.

In the 1933 tests, Imperial Chemical Industries No. 5 concentrated fertiliser was used for the third plot instead of special potato manure. The concentrated fertiliser was applied at the rate of 3 cwt. per statute acre—a rate which supplied approximately similar amounts of nitrogen, phosphate and potash as were supplied by 6 cwt. per acre of the standard mixture.

In the tests which were carried out in 1934 and 1935, a plot manured with concentrated fertiliser was again included and, in addition, a plot dressed with ready-mixed special potato manure.

The average results obtained in each year, along with the true average yields in respect of all the tests, are given in Table 9.

The results, being remarkably uniform for all four plots, make it possible to conclude:—

(1) That there is no apparent reason why the standard mixture of artificials for potatoes may not be mixed some time before application.

This means that valuable time just prior to, and after planting work begins, may be saved by having the manures mixed some time previously. It has been found that, after a week or so following mixing, the mixture is in good condition for application and remains so, if stored under reasonably suitable conditions.

(2) That neither the special potato manure nor the concentrated fertiliser has shown any superiority over the standard mixture.

These special manures, although giving satisfactory yields, are usually appreciably higher in price than that at which the standard mixture can be obtained and there is thus an obvious saving in outlay when the manurial mixture for potatoes is made up at home.

MINISTRY OF AGRICULTURE, STORMONT, BELFAST.

February, 1936.

Copies of this leaflet may be obtained free of charge, and post free, on application to the Secretary, Ministry of Agriculture, Stormont, Belfast. Letters so addressed need not be stamped.

GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT

April, 1936

VOLUME X

No. 12

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MINISTRY OF AGRICULTURE

MONTHLY REPORT

APRIL, 1936

Spring has arrived and brought with it better weather conditions, with the result that the general farming outlook is much brighter. Tillage operations have been pushed forward to a considerable extent, and, although the season will be late, the position is rather less unsatisfactory than was foreshadowed in previous reports.

In regard to the planting of potatoes, it is again desired to draw the attention of growers to the warning given by the Potato Marketing Board in Great Britain against over-planting. This warning was printed in the Ministry's report for March, and the Ministry wishes to supplement that information by pointing out to Northern Ireland farmers that if an excessive area is planted and heavy crops are obtained in Great Britain and in this country next season, the resulting surplus will only lead to a collapse of the market and a recurrence of low prices. Potatoes, being a perishable product, must find a ready market; otherwise they may become a heavy loss to the producer. Farmers who intend to increase their area under this crop this year should give serious consideration to the matter now.

A special article dealing with the insurance of agricultural labourers against unemployment appears on page 16 of this issue and should be read by all those who will be affected by the provisions of the new Unemployment Insurance (Agricultural) Act (Northern Ireland), 1936, which comes into force on 4th May next.

An account of the objects of the various live stock schemes and the extent of their operations during last year is printed on pages 7 to 11 and the results of some poultry feeding experiments are summarised on pages 21 to 26.

The information supplied in the March report as to the results of the grading of pigs in 1935 is supplemented by further particulars of the average weights of the carcasses for each month of last year. This information appears on page 19.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1ST APRIL, 1936.

The weather of the past month was, on the whole, much better than of late and permitted considerable progress to be made in overtaking arrears of field work.

March opened with its traditional boldness, and the first few days were very cold and wet. Then followed a drier period, with temperatures remaining on the low side. About the middle of the month the weather improved further, and spring was ushered in under bright and warm conditions. Some heavy showers of rain fell at intervals during the last fortnight of March, but they were of short duration and, followed by drying weather, did not cause the ground conditions to become difficult again. The day temperatures were on the low side for the first half of the month and ground frosts at night were fairly frequent.

Despite several interruptions caused by heavy showers of rain, outdoor work, which mainly consisted of preparing the ground for planting and sowing, was advanced to an appreciable extent. Although some of this work yet remains to be done, the general position is much more satisfactory and arrears have been considerably reduced. In the early districts the sowing of oats on lea land and the planting of early varieties of potatoes was commenced. It would appear from reports received that although the severe weather of the winter has been responsible for a late season the area under tillage this year will be at least as large as that of last year. Indeed, there are indications in many districts that point to an increase.

Grass lands have improved with the warmer weather in the second half of the month, but they are still backward for the time of the year.

A rapid improvement in the condition of grass lands will be welcomed by many farmers whose supplies of fodder are beginning to show signs of depletion on account of the extra demands for feeding to stock during the exceptionally severe winter. On the whole, however, the position regarding home grown foodstuffs is fairly satisfactory, and supplies of hay and roots will be sufficient to last out the season, but the surplus at the end of the season will be smaller than usual.

Cattle and sheep are in fair condition. The general lack of "keep" is reflected in the thin and backward appearance of some store cattle which have been shown at fairs recently, whilst sheep have been similarly affected by the cold weather and the poorness of pastures. Hand-fed store cattle have, on the other hand, been maintained in normal condition, and were selling well throughout the past month.

THE CROPS.

WHEAT.—Fields sown with autumn and winter varieties of wheat present some strange contrasts throughout the country. In some districts the brairds are healthy and fairly thick, whilst in others the effects of the severe weather are shown in the patchiness and general

backward appearance of the brairds. Some sowings have, in fact, been a complete failure and the ground will have to be re-ploughed. Early sowings with spring varieties have done rather better, and the brairds are in a promising state. Delayed sowings with these varieties were carried out during March, and it is reported that although this work will continue into April, there is a likelihood that the area under wheat will show a reduction this year. In general, the long spell of cold weather has retarded growth, and the crop is in a very backward state.

Small supplies of wheat were sold to authorised merchants last month at prices ranging from 5/- to 6/- per cwt.

OATS.—Some progress was made with the sowing of this crop in early districts, and it is expected the remainder of the sowings will be completed soon.

It is considered that the area intended to be sown with oats will be similar to that recorded for last year.

Supplies of white oats marketed last month were similar to those of February, and the average price was again firmer on the month at $5/4\frac{3}{4}$ per cwt. The range of prices at markets was from $4/8$ to $6/4$ per cwt.

BARLEY.—Very little of this crop has been sown as yet, but, in view of the increase in pig production, there is little doubt that the area under barley will show a further increase this year.

FLAX.—The scutching of this crop continues. Estimates of the amount still on farmers' hands vary from 10% to 30%.

There was an appreciable falling off in the demand for fibre during March, and prices declined during the month. Supplies were smaller than in February, and the average price during March was $8/7$ per stone as against $8/10\frac{1}{4}$ during the previous month. The most appreciable drop in prices took place at the end of the month, and for the week ended the 4th April the average figure was down to $8/1$ per stone.

POTATOES.—The planting of early varieties of potatoes commenced early in March, and this work is now fairly well forward. In regard to the total area likely to be planted with potatoes this season, it is interesting to note that despite a tendency in some districts to plant a larger acreage on account of the satisfactory prices ruling for this crop during the 1935/36 season and the comparatively lower prices of flax, the general inclinations seem to be to keep the area at the same level as in 1935. If, however, any change in the area takes place, it is generally conceded that it will be an increase.

The tubers have kept fairly well and very little sprouting has occurred up to the present. It is reckoned that about one quarter of the crop still remains on farms.

Supplies marketed for local consumption during March were larger than in February, and the average price of all classes of the main crop was 6d. cheaper on the month at $3/11$ per cwt.

The following table shows the slight downward trend in prices during last month :—

Week ended	Main Crop, all classes.	Arran Victory.	Kerr's Pink.
	s. d.	s. d.	s. d.
7th March, 1936 ..	4 0 $\frac{1}{2}$	4 2	4 0 $\frac{1}{2}$
14th " " ..	4 0 $\frac{1}{2}$	4 1 $\frac{1}{2}$	4 1 $\frac{1}{2}$
21st " " ..	3 10	3 9 $\frac{1}{2}$	3 9 $\frac{1}{4}$
28th " " ..	3 8 $\frac{3}{4}$	3 9 $\frac{1}{4}$	3 9
4th April, " ..	3 9	3 9 $\frac{1}{4}$	3 6 $\frac{3}{4}$

Shipments of potatoes to Great Britain during March were larger than a month ago.

The following are the returns of shipments during the past 6 weeks compared with a year ago :—

Week ended	Tons.		Tons.
29th February, 1936 ..	6,929	Corresponding week 1935	2,980
7th March, " ..	5,847	" " "	2,999
14th " " ..	7,469	" " "	3,629
21st " " ..	7,931	" " "	3,810
28th " " ..	7,088	" " "	3,759
4th April, " ..	5,167	" " "	3,826

The prices per ton paid by shipping merchants to growers continued to decline, and for the week ended 4th April ranged as follows :—

	Bagged.	Loose.
Up-to-Date (Red Soil) ..	£3 10 0 to £3 15 0	£3 0 0 to £3 5 0
Up-to-Date (Grey Soil) ..	£3 0 0 to £3 10 0	—
Arran Consul	£3 5 0 to £3 15 0	£3 0 0 to £3 5 0
Arran Victory	£3 0 0 to £3 15 0	£2 15 0 to £3 5 0
Kerr's Pink	£3 0 0 to £3 15 0	£2 15 0 to £3 10 0

MANGELS.—The roots, which have kept well, have been used for feeding to stock during the past month, and supplies still on hands are stated to be fairly plentiful.

TURNIPS.—This crop has not kept as well as in former years, and considerable losses have resulted from rotting and from the severe frosts of January and February. In some farms a shortage may be experienced, but, on the whole, supplies should be sufficient for the season's requirements.

HAY.—The heavy drain on supplies of fodder last winter has reduced supplies at most farms to a lower level than is usual at this time of year. There is, however, no danger of a general shortage occurring, but the likelihood of any appreciable surplus of stocks at the end of the season is considered remote.

All classes of upland hay were in much larger supply last month than in the preceding month, and prices continued to move upward and averaged 66/8 per ton during March, as against 65/- in February. Meadow hay was in slightly larger supply, and the average price was 9d. dearer on the month at 51/3 per ton.

GRASS SEED.—Small lots of grass seed were marketed at a few centres during March, and average prices recorded a further slight decline at 11/3½ per cwt. for perennial and 10/- per cwt. for Italian seed.

LIVE STOCK.

CATTLE.—Store cattle have improved in condition since the milder weather set in. The hand-feeding of store cattle has been more liberal this winter, and, where this has been done, animals have been maintained in a thriving condition. There is, however, a fair proportion of outlying stores in a rather backward state, due to the cold and the lack of "keep." Stall feeding has been carried out on a larger scale than in former years, chiefly in order to obtain the benefit of the beef subsidy.

Dairy cattle have been maintained in a normal, healthy state and are milking well.

The best trade at fairs last month was done in good quality stores in forward condition, and prices for these recorded an advance. Fat stock prices were fairly steady throughout March, although business in this end was quieter than of late. The demand for dairy cattle was confined to animals of best quality, and for others trade was dull at lower rates.

SHEEP.—The flocks, as a general rule, are in fair condition and comparatively free from outbreaks of disease. Lambing has been

fairly satisfactory, considering the severe climatic conditions. There was a smaller number of twin lambs born this year than usual. It was also reported that there was a fair proportion of losses at birth during the rough weather. Deaths from "wool-ball" in lambs were reported to be more prevalent than usual, and liver fluke disease is stated to have caused losses among ewes.

Small supplies of fat sheep and lambs were in good demand at fairs held during March. The fairly large offerings of ewes with lambs at foot also made a ready sale towards the end of the month.

PIGS.—There was a good demand for the smaller number of young pigs on offer at fairs last month, and the average price was firm on the month at 30s. 3d. per head, as against 30s. per head during February. Sows for breeding were in fair request, and those showing quality were sold at firmer rates. First litter sows were selling at from £6 to £8 per head, and second litter animals up to £12 per head.

HORSES.—The horse trade continues to operate on satisfactory lines, and prices were little changed on the month. First class draught horses are fetching up to £50 each. Best types of farm horses are quoted from £40 to £50, while second class farm horses are averaging about £30 each.

MILK.—There has been a slight improvement in the milk yield, and creameries were able to obtain plentiful supplies at prices ranging from 3½d. to 5d. per gallon for milk delivered to the creamery, the separated milk being returned to the farmer.

The average price paid during the month of February for all milk produced in Northern Ireland and delivered to creameries for manufacturing purposes was 5.15d. per gallon, and the Ministry has made equalisation payments at 0.85d. per gallon in order to bring the average price in respect of this month to 6d. per gallon, as provided by the Milk and Milk Products Act (Northern Ireland), 1934.

It should be noted that, under the regulations, creameries are required to distribute the equalisation payments in accordance with the butter-fat content of the milk received from each supplier. Farmers should, therefore, bear in mind that the actual payments made to them, being calculated on a butter-fat basis, may be at a rate per gallon which may vary below or above this average figure.

THE MARKETS DURING MARCH.

Supplies of the principal vegetables marketed during March were scarcer than in the preceding month, and price movements were, in the main, upward. Cabbage and cauliflowers were again less plentiful at Belfast Market, and, whilst cabbage were unchanged in price at 1¼ per dozen, cauliflowers were 3½d. cheaper at 2/2½ per dozen.

Savoys improved in price by $5\frac{1}{2}$ d. to $2\frac{1}{4}$ per dozen, parsley by 4d. to $1\frac{1}{10}$ per bunch, carrots by 1/- to $12\frac{1}{8}$ per cwt., parsnips by $5\frac{1}{2}$ d. to $6\frac{1}{7}$ per cwt., whilst leeks cheapened by $\frac{3}{4}$ d. to $7\frac{3}{4}$ d. per bunch, and garden turnips by 1d. to $1\frac{1}{2}$ per cwt.

Farmers' butter was more plentiful than in February and cheaper, the print variety easing in price by $\frac{1}{4}$ d. to $1\frac{3}{4}$ per lb., and lump butter by $\frac{3}{4}$ d. to $11\frac{3}{4}$ d. per lb. There were large seasonal increases in supplies of hen and duck eggs marketed during the month, and prices recorded a rapid decline. Hen eggs were $2\frac{3}{4}$ d. cheaper on the month at $5\frac{1}{2}$ d. per lb., and duck eggs fell in price by $4\frac{1}{11}\frac{3}{4}$ to $8\frac{3}{4}$ per 120.

Supplies of hens, chickens and ducks at markets were smaller than in the preceding month. Hens were $\frac{3}{4}$ d. dearer at $1\frac{1}{8}\frac{3}{4}$ each, chickens $1\frac{1}{4}$ d. dearer at $2\frac{1}{8}$ each, but ducks were $\frac{1}{4}$ d. cheaper at $1\frac{1}{11}\frac{3}{4}$ each.

THE COST OF LIVING INDEX FIGURE.

The cost of living index figure at 1st March, 1936, was 46, or one point below that for the previous month. At 1st March, 1935, the figure was 41.

OPERATIONS OF LIVE STOCK SCHEMES, 1935.

The predominant place which is occupied by live stock and live stock products in the agricultural economy of Northern Ireland is well known. Sales of live stock or of live stock products constitute the great bulk of the sales of produce off the farms of Northern Ireland, and it is only natural, therefore, that one of the cardinal objects of the policy of the Ministry should be to develop the live stock industry, which can be truthfully described as the backbone of Northern Ireland agriculture. The following paragraphs aim at giving a short summary of the objects of the various schemes and the extent of their operations in the year 1935:—

CATTLE BREEDING.

The cattle industry in Northern Ireland may be described as two-fold in character. In the first place, it produces a large supply of store cattle for export for fattening in Great Britain, but along with this trade in stores there is also a large production of milk and milk products. The production of store cattle and the production of milk are so intimately associated on almost every farm that no live stock policy pursued by the Ministry could hope to attain success if either of these aspects of our cattle industry were neglected. For this reason the Ministry's Cattle Breeding Schemes are designed to encourage the

breeding of dual purpose cattle which are capable of giving reasonably high yields of milk and also breeding good quality stores.

The cattle breeding Scheme, which has for its main object the distribution of high grade sires throughout the country, provides for the payment of premiums to farmers who undertake to keep bulls which have been passed by the Ministry's Inspectors as up to the required standard, and who agree to comply with the conditions governing the earning of the premium. The selection of the most suitable farmers to keep premium bulls in any county is left in the hands of the County Committee of Agriculture, which, when making their selections, endeavour to ensure not only that local requirements shall be met, but also that small farmers shall secure as large a share of the benefits to be derived from the scheme as is practicable.

The scheme provides for the award of premiums to bulls of the following breeds :—Shorthorn, Registered Dairy Shorthorn, Registered Dairy Non-pedigree Shorthorn, Aberdeen Angus, Hereford, and Galloway. Bulls of the last-named breed are, however, eligible for premiums only if placed in a prescribed locality in the eastern mountainous area of County Antrim, for which the breed is particularly suitable, and which specialises in the production of store cattle of the Galloway type for shipment to south-west Scotland, where there is a special demand for these stores.

Two centres in Northern Ireland are recognised for the selection of bulls for first year premiums, namely, the spring sales held annually under the auspices of the Royal Ulster Agricultural Society and the North-West of Ireland Agricultural Society, at Balmoral and Londonderry, respectively. In addition, however, the Royal Dublin Society's spring show and sale at Ballsbridge is a recognised centre for applicants, and the annual sale of Galloway bulls held at Ballymena is the approved centre for the supply of premium bulls of this breed to selected applicants in the prescribed area in County Antrim.

The inspection of bulls with a view to the award of continuation premiums is carried out at the end of the year at local centres fixed by the Ministry, due regard being paid to the convenience of the premium holders. On an average, the bulls are awarded a premium for three successive seasons, and in special cases—particularly dairy bulls—premiums are granted for a longer period if the animals have proved fruitful and have passed the local inspection. The Ministry is glad to observe that the practice of retaining premium bulls that are breeding well is extending.

The value of a premium varies in accordance with the breed of bulls selected. In the year under review the maximum value of a premium payable was £19—this premium was paid in the case of a registered dairy Shorthorn bull with milk records on both sire's and dam's sides, but if milk records were kept only on the dam's side the premium payable was £16. For a pure-bred Shorthorn, Aberdeen Angus or

Hereford bull a premium of £14 was paid, and for a registered dairy non-pedigree Shorthorn bull or Galloway bull the value of the premium was £12. To earn a premium, a bull, in its first season, must serve 30 cows, and in each subsequent season 40 cows, the property of small farmers, at a nominal fee of a few shillings for each service. By this provision the benefits of the Scheme are widely disseminated throughout the province.

Additional money placed at the Ministry's disposal from the Agricultural Development Fund enabled County Committees to place out during 1935 in the poorer districts of the counties, 95 premium bulls on terms specially designed to suit farmers in those districts. These are known as "Special Term" bulls.

To further assist farmers to procure suitable animals, a scheme is in operation under which loans may be granted to breeders selected by the County Committees to buy premium bulls. Each loan is given for two-thirds the purchase price of the bull, and the security required is a Bond or Promissory Note and two sureties. The terms of the loan require repayment in two annual instalments at a rate of interest of 3 per cent.

A very limited number of subsidies for the purchase of high-class bulls are also granted from time to time to groups of farmers who have a reasonable number of pure-bred cows. The object is to grade up the pure-bred herds so that there may be an increased supply of bulls to help to meet the demand for animals suitable for premiums. Breeders are required to keep the bulls for five years and to offer the male progeny for sale at the spring sales in Northern Ireland recommended for the selection of bulls for premium purposes.

The operations of the Cattle Breeding Scheme for the period under review may be summarised as follows:—

Table giving particulars of the bulls selected for and awarded ordinary premiums under the Cattle Breeding Scheme in 1935:—

County.	Pure-bred registered dairy Shorthorn		Pure-bred Short-horn	Registered dairy non-pedigree Short-horn	Aberdeen Angus.	Galloway	Totals
	Dam and sire registered	Dam only registered					
Antrim ..	22	9	17	2	4	23	77
Armagh ..	10	6	19	1	3	—	39
Down ..	27	15	31	4	26	—	103
Fermanagh	18	8	10	—	19	—	55
Londonderry	18	4	23	—	6	—	51
Tyrone ..	21	16	23	2	20	—	82
Totals ..	116	58	123	9	78	23	407

Table giving particulars of the distribution in poorer districts of "Special Term" bulls in 1935:—

County.	Registered Dairy Shorthorn	Short-horn	Non-pedigree Dairy Shorthorn	Aberdeen Angus	Galloway (for Glens district in Co. Antrim)	Totals
Antrim ..	5	1	2	2	6	16
Armagh ..	2	3	2	4	—	11
Down	2	3	2	7	—	14
Fermanagh ..	1	8	1	9	—	19
Londonderry ..	2	4	3	8	—	17
Tyrone ..	2	3	2	11	—	18
Totals	14	22	12	41	6	95

Table showing the number of bulls standing for service in Northern Ireland in 1935 under the Cattle Breeding Schemes:—

Ordinary premium bulls	407
"Special Term" bulls (192 older plus 95 new) ..	287
Subsidy Stock Bulls	12
Totals	706

With regard to the location of premium bulls, the annual sale held under the auspices of the Royal Ulster Agricultural Society at Balmoral each year is the principal centre for the selection and supply of such bulls. On an average, approximately 500 bulls are inspected at this sale each year for premiums, and approximately 40 per cent. are passed. By an arrangement with the Irish Railway Clearing House, selected applicants buying premium bulls at this sale (and also at the Londonderry and Dublin spring sales) are entitled to have their animals carried free to their destination by rail, the Ministry defraying the cost of carriage at half rate.

The Annual Sale at Balmoral may be taken as a reflex to some extent of the position in the cattle industry generally, and it is, therefore, of interest to record that the 1936 sale was one of the most successful sales held at Balmoral for several years. There was an exceptionally good demand for bulls, accelerated by the presence of Argentine and Scottish buyers. The average prices for all types of bulls showed a big advance as compared with the previous year, and the total sales, amounting to £19,274, showed an increase of over £3,000. The champion bull of the show went for the top price of 560 guineas, which was the highest price paid at Balmoral sale since 1927.

REGISTRATION OF DAIRY CATTLE.

The foregoing account of the Ministry's activities in connexion with the provision of high-class sires must be considered in conjunction with what is being done to improve the milk yielding qualities of the dairy stock of the province.

A scheme is in operation which aims at raising the general standard of pure-bred dairy cattle throughout the country by inducing owners to mate their best milkers with high-class dairy bulls and to record the milk yields of their cows with a view ultimately to the entry in the Ministry's registers of pure-bred dairy cattle of those animals which attain the prescribed standards. It is now realised that, authentic milk records are the basis of economical milk production and amongst an increasing number of farmers there is a growing appreciation of the benefits to be derived from this scheme.

The procedure adopted is that inspections are carried out twice each year, and those cows which are of good conformation and type are passed as suitable for provisional selection for registration. Such cows are then tested for quantity and quality of milk, and particulars of those which have attained to the prescribed standards are entered in the Ministry's Registers of Dairy Cattle. During the milking period, the Ministry's milk samplers visit the herds periodically and take milk samples, which are analysed for butter-fat content by the Chemical Research Division. If the cow gives the quantity and quality of milk prescribed for registration and produces a calf (after a normal period of gestation) within 14 months of the date of calving immediately preceding the milking period for which the record has been kept, particulars of the animal are entered in the appropriate register.

A second register is kept of non-pedigree dairy cattle. Cows for this register are entered in Milk Recording Associations, and the milk yields are recorded for the period of their lactation, at the close of which, provided they have qualified in accordance with the conditions specified in the scheme, they are inspected and, if found to be up to the required standard of conformation, are duly registered.

The operations of the schemes for the registration of dairy cattle have naturally a close relation to the work of the general cattle breeding scheme already described, as the male progeny of registered cows are eligible to compete for the premiums offered by the Ministry. This provides a further inducement to farmers to test their cows, as bull calves supported by milk records command higher prices as premium bulls than calves from unregistered cows.

MILK RECORDING ASSOCIATIONS.

These associations are a very important factor in the Ministry's general scheme for raising the standard of dairy cattle in Northern Ireland. Farmers are now coming to realise that it is only by the systematic keeping of milk records that they can distinguish between

the profitable and unprofitable cows in their herds, and the local associations provide popular media through which testing can conveniently be effected. During the year interest in this progressive movement was well maintained, the total number of associations approved being 75, with a membership of 2,618 and 16,696 cows under test. The growth in the milk recording movement from the early days of the Ministry can best be illustrated by stating that in the beginning of the year 1922, when the Ministry commenced to function, there were 6 established associations in Northern Ireland, with a membership of 199 and 1,244 cows under test.

Another instrument for the improvement of the cattle industry in Northern Ireland has been the Live Stock Breeding Act of 1922, under which all bulls used for service must be licensed by the Ministry. It is the practice to hold two tours of inspection, one in the spring and one in the autumn of each year at a large number of centres, and by means of Press notices, posters and circulars, etc., farmers are reminded beforehand of the necessity for applying for licences and are advised as to the procedure to be observed in order to have their bulls inspected. In addition to these local centres, the annual spring sales of the Royal Ulster Agricultural Society at Balmoral and the North-West of Ireland Agricultural Society at Londonderry and a few additional representative local sales are utilised each year as inspection centres, and breeders who have entered animals are enabled, if they so desire, to have their animals inspected for licences at these fixtures instead of at the ordinary inspection centres. The following table illustrates the extent of the operations which took place under this Act in the year ended 30th September, 1935 :—

LICENCES FOR BULLS.

Applications.	Licences Granted.	Licences Refused.	Applications Withdrawn.
4,644	3,049	1,423	172

There were 28 appeals lodged in the year ended 30th September, 1935, of which 7 were successful. In the past six months there were 14 appeals lodged, 4 being successful.

In a number of instances the Ministry felt obliged to institute legal proceedings against owners who persisted in retaining unlicensed bulls contrary to the provisions of the Act. Convictions were secured in a large majority of cases.

SWINE BREEDING.

With the object of improving the breed of swine in Northern Ireland, there has been since the inception of the Ministry a scheme operating on somewhat similar lines to the Cattle Breeding Scheme. The aim of the scheme is to help boar owners to keep sires of a high degree of excellence, and provision is made for the award by County Committees of premiums in respect of boars of the Large White York and Large White Ulster breeds to selected farmers who undertake to comply with the conditions of the Scheme. To earn the premium payable in respect of both first-year and second-year boars (which is £8 in some counties and £7 in others), the animals are required to serve from 30 to 40 sows at a service fee varying from 2s. 6d. to 5s. At the end of the first season, boars are inspected with a view to determining their suitability for premiums for a second year. All such boars must show a high degree of excellence, and animals which show signs of having been badly cared for are not selected.

As might be expected, this scheme has expanded considerably consequent upon the reorganisation of pig marketing in Northern Ireland under the Pigs Marketing Scheme and the rapid increase in the pig population which has taken place during the last three years. In 1932 there were 188 boars standing for premiums under the scheme. This number had increased to 346 in 1935. Moreover, the boars located in 1932 comprised 132 of the Large White Ulster breed and 56 Large White (York), while of the 346 boars standing in 1935 there were only 38 Ulster boars, the remaining 308 being Large White. This almost complete change over from the Ulster to the Large White breed is indicative of the efforts which farmers are making, under the guidance of the Ministry and the Pigs Marketing Board, to cater for the increased demand for the leaner type of bacon. The details of the operations of the scheme during 1935 are given in the following table :—

County.	1st Year Boars.	2nd Year Boars.	Total.
Antrim	39	30	69
Armagh	27	29	56
Down	25	36	61
Fermanagh ..	20	23	43
Londonderry ..	25	20	45
Tyrone	34	38	72
Totals	170	176	346

County.	Breeds.		Total number of premium boars.
	Large White Ulster.	Large White.	
Antrim	9	60	69
Armagh	4	52	56
Down	2	59	61
Fermanagh ..	5	38	43
Londonderry ..	8	37	45
Tyrone	10	62	72
Totals	38	308	346

The Live Stock Breeding Act, which had applied to cattle since 1922, was extended as from the 1st January, 1934, to include boars, and from this date all boars standing for service in Northern Ireland must be licensed. Boars are inspected for licences at the owners' farms throughout the year, and are, on an average, between the ages of 4 and 7 months when inspected. The operations of this Act in 1935 and the early period of 1936 are summarised below :—

LICENCES FOR BOARS.

Year	Applications	Licences Granted	Licences Refused	Applications Withdrawn	Not yet Inspected
1935	821	741	47	33	—
1936*	478	422	14	16	26

* Up to 31st March.

SHEEP BREEDING.

(a) BLACKFACE SHEEP SCHEME.—In a hilly country like Northern Ireland, it is natural that there are large areas devoted solely to the raising of blackface sheep. There are, of course, certain large flock owners, but the majority of the sheep are the property of small owners who possess common mountain grazing rights. The Ministry's mountain sheep scheme aims at raising the standard of blackface sheep, and the means adopted is the distribution of well-bred rams on easy terms to small owners. The rams are selected by the Ministry on behalf of county committees of agriculture, who sell the rams at reduced prices to selected applicants in mountain districts. Each applicant is required to sign an undertaking to keep the ram for at least two years in good and healthy condition, and at the end of that period the ram is, as a rule, sold to a breeder in another district. In the

general working of the scheme the Ministry co-operates closely with the Ulster Ram Breeders' Association, and, in addition to giving an annual grant, it recognises the sales held annually in Belfast in the autumn under the Association's auspices as centres for the selection of premium rams. The great majority of the rams located under the scheme are procured at these sales, but in addition it has been found advisable to introduce fresh blood by importing each year a number of high-class rams from Scotland.

It might be added that the number of rams placed in 1935 was 130, which is also the average number located in each of the past 5 years.

(b) **LOWLAND SHEEP SCHEME.**—In lowland districts premiums are awarded for pure-bred rams of lowland breeds. Broadly speaking, the scheme operates on lines similar to those of the other premium schemes promoted to encourage live stock breeding. The value of the premium is £6 in four counties and £5 in the remaining two counties, and rams may be awarded a second and also a third year premium provided they are approved each season by the Ministry—a third year premium is, however, granted only to rams of outstanding merit which have been changed to a new locality. As in the case of black-face sheep, the rams are selected at the autumn sales held in Belfast under the auspices of the Ulster Ram Breeders' Association.

The following table shows the number of premium rams located in each county in 1934-1935:—

County.	Number of Premium Rams by Breeds and ages.					Total.
	Breeds.		Ages.			
	Border Leicester.	Suffolk.	1st Shear.	2nd Shear.	3rd Shear.	
Antrim	8	—	4	4	—	8
Armagh	10	—	3	3	4	10
Down	19	—	10	8	1	19
Fermanagh ..	6	—	1	5	—	6
Londonderry ..	11	—	8	3	—	11
Tyrone	8	—	4	4	—	8
Totals	62	—	30	27	5	62

INSURANCE OF AGRICULTURAL WORKERS AGAINST UNEMPLOYMENT.

Under the new Unemployment Insurance (Agriculture) Act (Northern Ireland), 1936, workers between the school-leaving age and 65 years employed in agriculture (which includes horticulture and forestry) must be insured against unemployment, subject to certain exceptions. The most important of these exceptions are workers who bear certain relationships to their employers, and private gardeners. The employed person is not insurable if related to the employer in any of the following ways : husband, wife, father, mother, son, son's wife, daughter, daughter's husband, grandparent or grandchild. For this purpose a step-father, step-mother, adoptive father, adoptive mother, step-son, step-daughter, adopted son or adopted daughter, will rank as father, mother, son or daughter, as the case may be.

A gardener will be insurable if the garden in which he is employed is carried on for the purpose of gain, for example, a nursery garden, or if he is employed by a public or local authority, or a society, institution, association, club, or company, irrespective of whether the employing body carries on horticulture for the purpose of gain or not. On the other hand, a private gardener, that is to say, one who is employed in a garden not carried on for the purpose of gain, and whose employer is not a body of the kinds before-mentioned, will not be insurable.

The contributions, which will become payable as from 4th May, 1936, will be at the following rates :—

	Weekly rate of contribution.	
	By the Worker.	By the Employer.
	d.	d.
Men who have attained the age of 21 years ..	4½	4½
Women who have attained the age of 21 years	4	4
Young men between the ages of 18 and 21 years	4	4
Young women between the ages of 18 and 21 years	3½	3½
Boys between the ages of 16 and 18 years ..	2	2
Girls between the ages of 16 and 18 years ..	1½	1½
Boys who have not attained the age of 16 years	1½	1½
Girls who have not attained the age of 16 years	1	1

Payment of contributions will be made by affixing stamps to the worker's unemployment book. The employer will be liable for the payment of the contribution in the first instance, but he may recover the worker's share by deduction from wages.

Any worker employed in insurable agricultural work who is domiciled outside Great Britain or Northern Ireland and who is ordinarily resident outside Great Britain or Northern Ireland, will be treated as an exempt person. This means that the employer's share of the contribution only will be payable and the worker will acquire no benefit rights. The employer's share of the contribution (but not the worker's) will similarly be payable in respect of persons over 65 employed in insurable agricultural work.

The Act gives power to the Ministry of Labour to make regulations allowing a refund of a proportion of the contributions paid in respect of agricultural workers hired on a yearly or half-yearly basis. For this purpose a yearly hiring means a hiring for a period of not less than fifty consecutive weeks, and a half-yearly hiring one which lasts for more than twenty-one weeks, but less than fifty weeks. Contributions will be payable in the ordinary way, but the employer and worker will each be entitled to have refunded to him, one-quarter of the contributions he has paid in the case of a yearly hiring, and one-eighth in the case of a half-yearly hiring, provided that notice of the making of the hiring is given not later than twenty-eight days after the commencement of work under it, that the hiring has lasted for the agreed period, and that application for repayment is made within a time after its termination which will be fixed by the regulations. The fact that such a refund of contributions has been made will not in any way affect the worker's benefit rights.

Agricultural benefit becomes payable as from the 5th November, 1936, but claims may be lodged on or after the 29th October. Days of proved unemployment between the 29th October and the 4th November will be reckoned as part of the waiting period of six days which must be served before benefit can be drawn. To obtain agricultural benefit an unemployed person must lodge a claim at the Employment Exchange or other office of the Ministry of Labour in the area in which he resides. The principal conditions for the receipt of benefit are that the applicant shall prove :—

that not less than 20 contributions have been paid by an employer in respect of his employment in agricultural work during the two years preceding the date of claim ;

that he is unemployed ;

that he is capable of and available for work ; and

that, subject to certain exceptions, he has been resident in Great Britain or Northern Ireland for the five years preceding the date of claim.

Persons who have lost employment through misconduct, or left it voluntarily without just cause, or refused an offer of, or neglected to avail of an opportunity of suitable employment without just cause, are disqualified for the receipt of benefit for a period not exceeding six weeks. An applicant who satisfies the statutory conditions, and is free from disqualification, is entitled to receive benefit during the ensuing benefit year on the following scale :—

12 days for the first 10 contributions standing to his credit at the beginning of the benefit year, with 3 additional days benefit for each remaining contribution standing to his credit at that date.

When the full amount of benefit payable under the scale has been drawn in a benefit year, no further agricultural benefit can be paid in that benefit year in any circumstances, nor at any time subsequently unless the applicant, in addition to satisfying the usual statutory conditions, can also prove the payment of ten further contributions in respect of insurable agricultural work since he last drew agricultural benefit.

Persons who have had contributions paid on their behalf under both the Agricultural and the "General" Schemes, and who satisfy the statutory requirements under both Schemes, can draw the full amount of benefit payable under each Scheme, but not concurrently. An applicant who is qualified to receive benefit under both Schemes at the same time will be paid at the higher of the two rates.

Leaflets explaining the Scheme in greater detail can be obtained at any Employment Exchange.

MARKETING OF DEAD PIGS.

GRADING IN 1935.

In the Monthly Report for March the results of the grading of dead pigs in 1935, carried out by the Veterinary Officers of the Ministry in conjunction with the Pigs Marketing Board and the curers, were reviewed in considerable detail, and it is thought that the following figures, which have since been taken out, will be of interest to those concerned with the marketing of dead pigs.

In the following tables are given the average weights of carcasses falling into each of three prescribed grades during each month of 1935:—

Month.	Weight Class I. c.1.1.14 to c.1.2.14			Weight Class II. c.1.2.15 to c.1.3.14		
	Grade A.	Grade B.	Grade C.	Grade A.	Grade B.	Grade C.
	c. q. lb. 1 2 1	c. q. lb. 1 2 4	c. q. lb. 1 2 5	c. q. lb. 1 2 25	c. q. lb. 1 2 26	c. q. lb. 1 3 1
January	1 2 1	1 2 4	1 2 5	1 2 25	1 2 26	1 3 1
February	1 2 0	1 2 3	1 2 4	1 2 25	1 2 26	1 3 0
March	1 2 0	1 2 3	1 2 4	1 2 25	1 2 27	1 3 0
April	1 2 0	1 2 2	1 2 5	1 2 25	1 2 26	1 3 0
May	1 2 0	1 2 4	1 2 4	1 2 25	1 2 26	1 3 0
June	1 1 27	1 2 2	1 2 5	1 2 24	1 2 26	1 2 27
July	1 2 1	1 2 3	1 2 3	1 2 24	1 2 26	1 2 27
August	1 2 2	1 2 3	1 2 5	1 2 26	1 2 26	1 3 0
September ..	1 2 1	1 2 4	1 2 5	1 2 27	1 2 27	1 3 1
October	1 2 1	1 2 4	1 2 5	1 2 25	1 2 27	1 3 1
November ..	1 2 2	1 2 4	1 2 4	1 2 26	1 3 0	1 3 0
December ..	1 2 1	1 2 4	1 2 4	1 2 25	1 2 27	1 2 27
Average for Year	1 2 0½	1 2 3½	1 2 4½	1 2 25½	1 2 27	1 3 0½

In Weight Class I, it will be noted that the average weight of Grade A carcasses was from 1 to 4 lb. lighter than that for Grade B carcasses, and that Grade C carcasses were generally heavier than Grade B carcasses. The Grade A carcasses were lightest in June (c.1.1.27) and heaviest in August and November (c.1.2.2), and averaged c.1.2.0½ for the year. In the case of Grade B carcasses, the average weight was lowest in April and June (c.1.2.2), the average for

the year being c.1.2.3 $\frac{1}{4}$. The Grade C carcasses ranged from c.1.2.3 to c.1.2.5 and averaged c.1.2.4 $\frac{1}{2}$ over the year.

In Weight Class II, the Grade A carcasses averaged less than either the Grade B or Grade C carcasses, and the tendency towards lighter marketing weights in mid-summer is also evident.

Month.	Weight Class III. c.1.3.15 to c.2.0.0			Weight Class IV. c.2.0.1 to c.2.0.14		
	Grade A.	Grade B.	Grade C.	Grade A.	Grade B.	Grade C.
	c. q. lb. 1 3 21	c. q. lb. 1 3 21	c. q. lb. 1 3 22	c. q. lb. 2 0 5	c. q. lb. 2 0 6	c. q. lb. 2 0 7
January	1 3 21	1 3 21	1 3 22	2 0 6	2 0 5	2 0 7
February	1 3 20	1 3 21	1 3 22	2 0 6	2 0 6	2 0 6
March	1 3 20	1 3 19	1 3 21	2 0 5	2 0 6	2 0 7
April	1 3 21	1 3 19	1 3 20	2 0 6	2 0 7	2 0 6
June	1 3 20	1 3 20	1 3 20	2 0 5	2 0 6	2 0 6
July	1 3 21	1 3 20	1 3 22	2 0 6	2 0 5	2 0 6
August	1 3 22	1 3 21	1 3 21	2 0 7	2 0 7	2 0 7
September	1 3 20	1 3 21	1 3 20	2 0 6	2 0 6	2 0 7
October	1 3 20	1 3 21	1 3 22	2 0 5	2 0 5	2 0 6
November	1 3 20	1 3 21	1 3 21	2 0 6	2 0 6	2 0 7
December	1 3 20	1 3 21	1 3 21	2 0 7	2 0 5	2 0 6
Average for Year	1 3 20	1 3 20	1 3 20 $\frac{1}{4}$	2 0 6	2 0 6	2 0 7

The figures in Weight Classes III and IV are not so consistent as for the lighter weight classes, but nevertheless indicate that the grade is related to weight. It should be mentioned, however, that only about 8 $\frac{1}{2}$ per cent. of the total dead pigs marketed fell into these two Weight Classes.

The figures as a whole show that within each weight range the best grading results are to be expected in the case of the lighter pigs.

RESULTS OF SOME POULTRY FEEDING EXPERIMENTS.

Poultry feeding experiments have been carried out at Greenmount Agricultural College for some years. The experiments were designed with the object of investigating the value of different rations for egg production when fed to pullets. It is hoped that the following summary of the results to date will be of interest to poultry keepers.

THE VALUE OF SEPARATED MILK FOR PRODUCING EGGS.—In experiments carried out at Hillsborough Research Institute, the value of separated milk for egg production has been clearly proved, and the results of the tests at Greenmount may be regarded as confirmation of those already obtained. Two tests of a similar nature were carried out during the years 1931/32 and 1932/33. The objects were (a) to demonstrate the value of separated milk; (b) to demonstrate that a cereal ration alone is not adequate for full production; and (c) to compare separated milk with a milk substitute, i.e., fish meal.

The cereal mixture was composed of:—

4 parts by weight brown pollard,
3 " " " " maize meal,
1 part " " " " bran,
1 " " " " Sussex ground oats.

To one group of birds this mixture was fed; to another group the same mixture plus $\frac{1}{4}$ pint separated milk per bird daily; and to another, the same mixture, to which 10 per cent of fish meal had been added. All three groups of birds received similar quantities of the meal ration and of the same grain mixture. Oyster shell was provided as required.

The results are summarised in the following tables:—

1931/32 TEST—DURATION, 210 DAYS FROM 14TH OCTOBER, 1931.

Breed—Light Sussex.

Feeding.	Total number of eggs laid.	Average number of eggs per bird.	Average total weight of eggs per bird.	Cost of food per 100 eggs produced.*
Cereal mixture plus separated milk	1,064	118.2	17.4lb.	3/3½
Cereal mixture plus 10% fish meal	988	109.8	15.7lb.	3/1½
Cereal mixture alone	746	82.9	11.6lb.	3/7½

* Costs are based on prices current at the time the test was carried out.

1932/33 TEST—DURATION, 224 DAYS FROM 12TH OCTOBER, 1932.

Breed—White Wyandotte.

Feeding.	Total number of eggs laid.	Average number of eggs per bird.	Average total weight of eggs per bird.	Cost of food per 100 eggs produced.
Cereal mixture plus separated milk	1,235	137.2	18.1lb.	2/5 $\frac{1}{4}$
Cereal mixture plus 10% fish meal	1,225	136.1	18.1lb.	2/2 $\frac{1}{4}$
Cereal mixture alone	880	97.8	11.9lb.	2/8

The results from both these tests are substantially similar and show clearly (a) that separated milk is a valuable egg-producing food ; (b) that fish meal added in the proportion of 10 per cent. to the cereal ration is a satisfactory substitute for separated milk ; (c) that the cereal mixture alone not only lowered egg production but increased the cost of producing the eggs. The results of these experiments, as they relate to the cost of producing eggs, supply further proof of the contention that a cheap ration is not necessarily the most economical to use. For example, the cost per cwt. of the cereal mixture used in these experiments was less than the cost of the mixture plus fish meal, and yet the latter produced eggs at a significantly lower cost than the former.

SUBSTITUTES FOR SEPARATED MILK.—The experiment conducted the following year was designed to investigate the comparative values of certain supplements added to the cereal mixture. Here, again, experiments of a similar nature have already been carried out and published by the Research Station at Hillsborough. The test at Greenmount, therefore, provided an opportunity of investigating on a farm the results obtained from similar experiments at Hillsborough. In the test at Greenmount the basal meal mixture was as follows :—

4 parts by weight pollard,
 2 " " " maize meal,
 2 " " " bran,
 1 part " " Sussex ground oats.

Four groups of Rhode Island Red birds of similar breeding were included and all were treated alike as regards housing and runs. All four lots received drinking water and oyster shell as required, and grain mixture of similar kind and in similar quantity.

The details of the experimental feeding and of the results obtained are given in the following table:—

1933/34 TEST—DURATION, 296 DAYS FROM 16TH OCTOBER, 1933.

Breed—Rhode Island Red

Feeding.	Average weight of birds.		Average number of eggs laid per bird.	Cost of food per 100 eggs produced.
	At start.	At finish.		
Cereal mixture only	lb. 6.46	lb. 5.70	162.3	2/5
Cereal mixture, plus 8oz. common salt per cwt. of meal mixture ..	6.17	5.55	165.5	2/4
Cereal mixture, plus 1½ parts soya bean meal to 9 parts cereal mixture, plus 2lb. minerals per cwt. of meals	6.28	6.56	165.6	2/6½
Cereal mixture, plus 1 part meat and bone meal to 9 parts cereal mixture	6.22	6.25	173.4	2/3½

It will be noted:—

(1) that the birds fed on the cereal mixture plus 10 per cent. meat and bone meal produced the highest average number of eggs at the lowest cost, and at the same time maintained their body weight;

(2) that while the birds which received soya bean meal and minerals, instead of meat and bone meal, maintained their body weight, their production was not so good and the cost of producing eggs was higher;

(3) that there was a serious reduction in body weight in the birds which were fed, respectively, on the cereal mixture only and on the cereal mixture plus common salt.

An interesting aspect of these results is the comparatively small reduction in the average egg yield from the birds fed on the cereal mixture alone as compared with the average production in the other groups. The average production from the cereal mixture alone was only 6.4 per cent. less than in the meat and bone meal group, where the average production was highest. If, however, the average egg production from the birds fed on the cereal mixture alone, in the two previous experiments, is compared with that from the birds fed on the cereal mixture plus 10 per cent. fish meal, it is seen that the reduction

in egg yield amounts to 20.8 per cent. in one test and to 24.5 per cent. in the other. As it has been found that fish meal and high-grade meat and bone meal are of approximately equal value in meal mixtures for laying birds, it was evident that there was some other cause for the difference.

It will be noted that the composition of the cereal mixture used in the 1933/34 experiment was different from that of the cereal mixture used in the two previous experiments. The mixture in 1933/34 contained double the proportion of bran, and this fact suggested the possibility of bran being of considerable importance in a ration fed to laying birds.

MEAL MIXTURES WITH AND WITHOUT BRAN.—So far as could be ascertained, no experiments had been carried out to compare a cereal ration in which a suitable proportion of bran was included, with a cereal ration without bran. Opportunity was, therefore, taken in the experiment conducted in 1934/35 to test the assumption that bran had a particular value in a ration for egg production. While the principal object of this test was to compare high and low protein rations, in co-operation with other workers on this question, the results of the subsidiary object, namely, a comparison of bran and no bran, are of particular interest.

The experiment comprised four groups of Rhode Island Red pullets, and the feeding, where different, was as follows :—

Group 1. Cereal mixture without bran, plus $\frac{1}{2}$ per cent. common salt. The cereal mixture was composed of—

4	parts by weight	pollard,
3	" "	maize meal,
1	part	Sussex ground oats.

Group 2. Cereal mixture with bran, plus $\frac{1}{2}$ per cent. common salt. The cereal mixture was composed of—

4	parts by weight	pollard,
2	" "	bran,
2	" "	maize meal,
1	part	Sussex ground oats.

Group 3. Cereal mixture without bran, plus 10 per cent. meat meal (60% protein). The cereal mixture was the same as for Group 1.

Group 4. Cereal mixture with bran, plus 12 per cent. of a mixture of equal parts fish meal, meat meal and soya bean meal, plus $\frac{1}{4}$ per cent. common salt. The cereal mixture was the same as for Group 2.

The test extended from 23rd October, 1934, to 24th September, 1935, and the results are summarised in the following table:—

Feeding.	Average weight per bird at start of test.		Average number of eggs laid per bird during 1st 16 weeks of test.	Cost of food per 100 eggs produced during 1st 16 weeks of test.	Average number of eggs laid during entire test period.	Cost of food per 100 eggs produced over entire period.	Average weight per bird at end of test.	
	lb.	oz.					lb.	oz.
Cereal mixture without bran, plus salt	6	4	38.8	4/2½	177.1	3/1½	6	2
Cereal mixture with bran, plus salt	6	4	53.9	3/0½	192.2	2/9½	6	6
Cereal mixture without bran, plus meat meal ..	6	4	32.1	4/7	178.7	3/1½	6	4
Cereal mixture with bran, plus a mixture of fish meal, meat meal and soya bean meal, plus salt ..	6	4	54.8	2/11	188.1	2/11½	6	3

In this table the average egg production and the cost of food are shown both for the first 16 weeks of the test (the winter period) and for the full 48 weeks. It was found that, during the winter months particularly, the birds fed on mash containing bran laid very much better than those fed on mash from which bran was omitted. This occurred both where salt was the supplement and where a high protein food was the supplement. The cost of producing eggs was also less in the cases of the groups of birds which received mash containing bran.

It is seen from the table that in the two groups where salt was the supplement, the birds getting bran each laid an average of 15.1 eggs more during the 16 winter weeks of the test than those which did not receive any bran, and an average of 15.1 eggs more over the entire test period. This shows that the average production after the first 16 weeks was approximately similar from both groups of birds. Further, the cost of food per 100 eggs produced during the first 16 weeks of the test is less by 1/1¼ in the bran-fed lot as compared with the no-bran lot.

The remaining two groups are not strictly comparable, since the group which received no bran had 10 per cent. meat meal as the protein supplement, while the group which received bran had 12 per cent. of protein supplement. Despite this difference in the kind and proportion of protein supplement, it is interesting to note that the differences in average egg production between the bran and no bran

groups are very similar to those in the case of the other two groups. For example, the birds that got bran each laid, during the first 16 weeks of the test, an average of 22.7 eggs more than those which got no bran, and an average of 9.4 eggs more over the entire test period. The cost of producing eggs is also lower in the bran group than in that which did not receive bran.

An experiment of a similar nature is now in progress, and the results so far are in agreement with those reported above, namely, that the birds fed on a ration containing bran have laid better during the winter months than those fed on a ration without bran.

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.), 1934.

PIG INDUSTRY COUNCIL.

ELECTION OF MEMBERS BY LICENSED BACON-CURERS.

The Agricultural Marketing (Pig Industry) Act (Northern Ireland), 1934, provides *inter alia* for the establishment of a Pig Industry Council to consist of the following persons:—

Three members appointed by the Minister of Agriculture, of whom such one as the said Minister may designate shall be the Chairman of the Council ;

Three members appointed or elected as follows :—

- (a) If a bacon marketing scheme is in force, appointed by the bacon marketing board to represent licensed bacon-curers ;
- (b) If no bacon marketing scheme is in force, elected, in accordance with the prescribed regulations, by licensed bacon-curers ;

Three members appointed or elected as follows :—

- (a) If a pigs marketing scheme is in force, appointed by the pigs marketing board to represent pig producers ;
- (b) If no pigs marketing scheme is in force, elected in accordance with the prescribed regulations, by pig producers.

The duties of the Council are to determine, with the approval of the Ministry, the prices at, below or above which, and the terms on which pigs or any description of pigs may be sold by producers and, furthermore, to advise the Ministry as to the production, marketing and grading of pigs and bacon and the encouragement of agricultural education and research connected with the production and marketing of pigs and bacon. The Council has also to advise the Ministry as

to the granting of licences to bacon curers and to perform such functions as are required in connection with the registration of contracts.

The Pig Industry Council was established in January, 1935, the members being appointed by the Minister of Agriculture, and by the Bacon and Pigs Marketing Boards. The Bacon Marketing Scheme lapsed on the 30th September, 1935, and, accordingly Regulations were made under Section 12 of the Agricultural Marketing (Pig Industry) Act (Northern Ireland), 1934, to provide for the election of three members by bacon-curers licensed with the Ministry in accordance with the Agricultural Produce (Meat Regulation) Act (Northern Ireland), 1930. The Regulations provide for the election of members by licensed bacon-curers to be held not later than the 31st May, 1936, and arrangements are being made to hold the election during the present month. Candidates for election require to be nominated in writing by two licensed bacon-curers as proposer and seconder, and the nomination must be assented to by at least eight other licensed bacon-curers. Nominations must be received in the Ministry not later than Saturday, the 18th April, 1936.

For the purpose of the election each licensed bacon-curer will be allotted a number of votes equivalent to the number of pigs put into cure by him during the twelve months ended 31st December, 1935. This number of votes must be cast in total for each candidate for whom the licensed bacon-curer wishes to vote, and the number cannot be "split up" amongst different candidates. A voter may not vote for more than three candidates, *i.e.*, the number of vacancies on the Pig Industry Council allotted to representatives of the licensed bacon-curers.

Voting papers will be dispatched not later than the 29th April, and in order to count in the election, must be returned, properly completed, so as to reach the Ministry not later than the 6th May, 1936. The counting of the votes will probably be made on the 7th May, and the results will be declared immediately thereafter.

PIG PRICES FOR APRIL, 1936.

The Pig Industry Council for Northern Ireland have announced the following prices for dead pigs for sale by producers to curers in Northern Ireland in April, 1936:—

PRICES PER DEAD CWT.

Weight Class (Dead weight).	Grade A.	Grade B.	Grade C.	U.L. or U.F.
I. c.1.1.14 to c.1.2.14 ..	60/3	57/3	54/3	51/3
II. c.1.2.15 to c.1.3.14 ..	60/3	57/3	54/3	51/3
III. c.1.3.15 to c.2.0.0 ..	57/3	54/3	51/3	48/3
IV. c.2.0.1 to c.2.0.14 ..	51/3	48/3	45/3	42/3

U.L. = Under Grade A measurements.

U.F. = Over Grade C. measurements.

The price for partly black pigs between c.1.1.14 and c.2.0.14 will be 5/- per cwt. below the relevant grade price.

Authorised cuts :—

- (a) Broken ham (dry, shank and/or shell bone break)—5 per cent. of the gross value of the carcase.
- (b) Broken ham (wet break).—12½ per cent. of the gross value of the carcase.
- (c) Shoulder-stuck carcase.—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase weighing between c.1.1.14 and c.2.0.14 is condemned and the existence of disease could not reasonably have been known to the producer at the time of slaughter the appropriate grade price shall apply. If the carcase is wholly condemned on account of disease, the existence of which could not reasonably have been known to the producer at the time of slaughter, the relevant Grade B price shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcasses weighing under c.1.1.14 or over c.2.0.14 and (b) pigs visibly diagnosable as diseased before slaughter and subsequently condemned; emaciated or screw pigs; smelling pig carcasses with definite indications of putrefaction and pig carcasses badly abused or damaged before being handed over by the producer to the curer.

PRICES FOR WILTSHIRE PIGS SOLD ON DIRECT CONTRACT.

In the case of pigs sold alive under direct contract to Wiltshire curers the prices per dead cwt. payable for graded pigs delivered in respect of the month of April are as follows :—

Weight Class (Dead Weight).	Grade 1.	Grade 2.	Grade 3.
Under c.1.0.14	54/3	54/3	54/3
c.1.0.14 to c.1.2.7	66/3	62/3	58/3
c.1.2.8 to c.1.2.10	63/3	59/3	55/3
c.1.2.11 to c.1.2.14	61/3	57/3	53/3
Over c.1.2.14	58/3	54/3	50/3

(The standard price, exclusive of bonus, for bacon pigs sold by contract in Great Britain during April is 11/7 per score dead weight, equivalent to 64/10 per cwt.).

PRICES FOR LIVE PIGS SOLD TO THE PIGS MARKETING BOARD.

The following prices per live cwt. will be paid for live pigs by the Pigs Marketing Board on and from April 1st, 1936, until further notice :

Weight Class (Live Weight).	Grade I.	Grade II.	Grade III.	Unsuitable.
<i>Wiltshire weights:</i>				
c.1.2.0 to c.1.3.14	50/6	48/-	45/6	39/-
<i>Shipping weights:</i>				
c.1.3.15 to c.2.0.0	46/6	44/-		39/-
c.2.0.1 to c.2.1.14	44/-	41/6		39/-
c.2.1.15 to c.2.2.7	41/6	39/-		36/-
c.2.2.8 to c.2.2.21	38/-	35/6		32/-

These prices do not apply to live pigs outside the above weights, live pigs intended for breeding, live boars, live sucked sows, rigs or stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside these weights can be sold only to the Board.

AUTHORISED DEDUCTIONS.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a levy and contribution at present amounting to 2/-.

In addition to this amount, a deduction not exceeding 6d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption.

In the case of pigs sold to the Board, there is a deduction of 2/6 per pig for marketing charges.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration for the sixteen weeks' period ended 21st March, as calculated by the Ministry, was 6/11. This price was used, together with the realised prices of bacon and hams and of fresh meats over a set period, to determine the standard price of pigs for April.

The following is the ration upon which the feeding cost is based :—

Barley Meal	30%
Maize Meal	40%
Pollards (White)	20%
Extracted Soya Bean Meal	5%
Meat and Bone Meal (60% Protein)	5%

GRADING STATISTICS.

Table showing the percentage of pig carcasses falling within the weight and grade classes indicated during February, 1936.

GRADE A.				GRADE B.				GRADE C.				TOTAL.
1	2	3	4	1	2	3	4	1	2	3	4	
17.80	14.14	2.16	.37	13.63	17.79	3.58	1.06	4.77	8.02	1.17	.27	84.76
UNGRADED CARCASSES.												
Under Grade A measure- ments. U.L.	Over Grade C. measure- ments. U.F.	Wholly condemned. U.	Wholly black injured or damaged. U.	Overweights Underweights boars, sows. X.	Partly black. Y.							
.08	2.66	.03	1.29	11.14	.04	15.24						
TOTAL												100%

The above figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry. The volume of trade last month was appreciably smaller than in January, which in turn was much larger than that for December. In 1935, the number of pigs purchased for curing in February, as compared with January, had a similar trend. The average price paid for each carcase, less deductions for levy and contribution charges was £4 9s. 3d., a reduction of 11d. on the January price. The average price per cwt. was unchanged at £2 14s. 8d., while the average weight showed a further reduction of 1 lb. at c.1.2.15.

The following table gives the result of an analysis of the purchase and grading statements furnished by Wiltshire bacon curers in respect of live pigs delivered on direct contract by producers during the month of February, 1936 :—

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable.	Total.
Under c.1 0q. 14lb.	.65	1.15	.05	.05	1.90
c.1 0q. 14lb. to c.1 2q. 7lb.	48.57	35.44	9.44	.20	93.65
c.1 2q. 8lb. to c.1 2q. 10lb.	.50	.75	.50	—	1.75
c.1 2q. 11lb. to c.1 2q. 14lb.	.20	.95	.45	—	1.60
Over c.1 2q. 14lb.	.15	.45	.50	—	1.10
TOTAL	50.07	38.74	10.94	.25	100.00

The average price per cwt. in respect of these deliveries works out at 61/- after allowing for levy deductions at 3/6 per pig. The average weight works out at c.1.1.14 per pig, the net average price per pig being £4 4s. 1d.

AGRICULTURAL MARKETING ACT (NORTHERN IRELAND), 1933.

BUTTER AND CREAM MARKETING SCHEME.

Notice was given on the 20th March that a Scheme regulating the marketing of butter and cream had been framed by the Ministry of Agriculture in pursuance of Section 1 (1) of the Agricultural Marketing Act (Northern Ireland), 1933. Copies of the Scheme may be obtained, price 6d, from His Majesty's Stationery Office, 80, Chichester Street, Belfast, or from any bookseller. Objections and representations with respect to the Scheme must be sent to the Secretary, Ministry of Agriculture, Stormont, Belfast, in writing, not later than the 2nd day of May, 1936, and must state the grounds of objection and the specific modifications required.

MILK FOR ICE CREAM.

NEW MINIMUM PRICE.

On 2nd April the Joint Milk Council for Northern Ireland issued to each holder of a Producer's and Distributor's Licence in Northern Ireland a letter informing them that the Council has, under Section Six of the Milk and Milk Products Act (Northern Ireland), 1934, made the following Determination in regard to the price of milk sold for the purpose of the manufacture of ice cream:—

Notwithstanding anything contained in the principal Determination (i.e., the Determination of the 30th July, 1935), the holder of a Producer's licence or the holder of a Distributor's licence may sell, for the purpose of the manufacture of ice cream, milk of Grade A, Grade B or Grade C to a person whose main business is the manufacture and sale of ice cream, at not less than 1/1 per gallon from the 5th April, 1936, to the 31st August, 1936, inclusive:

Provided that this provision shall not apply to sales of milk which, in accordance with the principal Determination, may be made at less than 1/1 per gallon.

As licence holders are aware, only milk of Grade A, Grade B or Grade C may be sold for the manufacture of ice cream, and the effect of the above Determination is to enable milk of these grades to be sold for this purpose at not less than 1/1 per gallon from the 5th April, 1936, to the 31st August, 1936, provided that the purchaser is a person "whose main business is the manufacture and sale of ice cream." A person, therefore, who, e.g., manufactures a quantity of ice cream in the course of his business as a hotel keeper, restaurant proprietor or confectioner, would not be entitled to purchase milk at the reduced

prices made permissible by the above Determination, although an ice cream manufacturer would not be debarred from obtaining milk at the lower rates by reason of the fact that in any cafe or ice cream shop conducted by him in connexion with his business as an ice cream vendor, food other than ice cream and such products could be obtained.

In certain areas in Northern Ireland (i.e., where the minimum retail price for Grade C milk is $1/4$ per gallon), it is, under the Determination of the 30th July, 1935, permissible to sell milk in quantities exceeding two gallons per day at not less than $1/-$ per gallon. The effect of the proviso to the new Determination is to continue the existing rates in such areas.

WHEAT ACT, 1932.

SALES OF HOME-GROWN WHEAT—CEREAL YEAR 1935-36.

Certificates lodged with the Wheat Commission by registered growers during the period August 1, 1935, to February 7, 1936, cover sales of 21,532,591 cwt. of millable wheat, as compared with 22,084,717 cwt. in the corresponding period (to February 8, 1935) in the last cereal year.

ANTICIPATED SUPPLY OF MILLABLE WHEAT.

The Minister of Agriculture and Fisheries, on the recommendation of the Wheat Commission, has made, under Section 2 of the Wheat Act, the Wheat (Anticipated Supply) No. 1 Order, 1936. This Order varies the Wheat (Anticipated Supply) No. 2 Order, 1935, by substituting 30,400,000 cwt. for 29,200,000 cwt. as the quantity of home-grown millable wheat of their own growing that it is anticipated will be sold by registered growers during the cereal year 1935-36. This variation is due to increases in the final estimates of acreage and yield of home-grown wheat of the 1935 harvest.

The Order does not have the effect of increasing the total sum that will be received by registered growers as a whole on account of deficiency payments, nor will it increase the amount of quota payments to be made by millers and importers of flour. The Order will, however, affect the quantity of wheat which the Minister may require the Flour Millers' Corporation to buy in June or July next, in the event of the Wheat Commission representing to the Minister that it is expedient for him to exercise this power under the Act.

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935.

Continuing the comparisons made in the Ministry's report for February last, particulars are now supplied for the second and winter quarter of the second year during which the "beef subsidy" has

been in operation, together with those for the corresponding months of the first year. All the figures supplied in this statement have been obtained from returns published by the Cattle Committee.

Month.				Steers.	Heifers.	Cow-heifers.	Total.
December,	1935	..	..	7,909	3,293	235	11,437
„	1934	..	..	(3,919)	(1,949)	(194)	(6,062)
January,	1936	..	..	10,027	3,523	244	13,794
„	1935	..	..	(8,043)	(2,937)	(250)	(11,230)
February,	1936	..	..	10,199	3,289	306	13,794
„	1935	..	..	(7,550)	(2,252)	(288)	(10,090)
Total,	1936	..	..	28,135	10,105	785	39,025
„	1935	..	..	(19,512)	(7,138)	(732)	(27,382)

While the total number of cattle certified during the quarter ended February, 1936, was appreciably larger than that recorded for the corresponding quarter ended February, 1935, the percentage increase being 42.5, the latter figure shows a decrease from the percentage increase of 76.5 recorded during the autumn quarter ended 30th November, 1935, when compared with the figures for the first three months of the subsidy.

The greatest increase in the number of cattle certified last quarter occurred in the month of December, when the percentage increase on the figure for the corresponding month in 1934 was as high as 88.7. In January, 1936, the percentage increase over the figure for January, 1935, was 22.8, and the corresponding figure for February last was 36.7.

The following table shows that should even a normal seasonal increase occur in the number certified during the spring months of this year, viz., March, April and May, the total for the first year of the subsidy will be exceeded :—

First year of Subsidy.		Second year of Subsidy.	
First Quarter ended November, 1934	20,438	Quarter ended November, 1935	36,065
Second Quarter ended February, 1935	27,382	Quarter ended February, 1936	39,035
Third Quarter ended May, 1935 ..	32,315		
Fourth Quarter ended August, 1935	27,653		
Total first year	107,788	Total first half second year ..	75,100

The average prices per live cwt. during the quarter under review of all cattle in respect of which payments have been made by the Cattle Committee have been as follows :—

Month.	England and Wales.		Scotland.		Northern Ireland.		United Kingdom.	
	1936	1935	1936	1935	1936	1935	1936	1935
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
January ..	35 2	35 2	38 0	39 0	30 9	31 3	35 5	35 10
February ..	35 3	33 10	37 5	37 2	31 11	30 10	35 5	34 4
March ..	35 2	33 5	36 4	36 1	32 4	29 10	35 2	33 9

Further statistics received from the Committee show that the total payments made from the Cattle Fund to Northern Ireland owners up to and including 28th March last amounted to £398,653 17s. 6d., and were in respect of 189,168 animals sold on a live weight basis. The average payment per head of cattle was, therefore, £2 2s. 2d.

During the week ended 28th March last, payments to Northern Ireland owners were in respect of 2,145 steers, 662 heifers, 85 cow heifers. The total weight of these animals was 23,529 cwt. and their total realised value was £37,659 7s. 0d. The average weight of each beast was 8 cwt. oqr. 15 lbs., the average price per live cwt. was 32/-, and the average amount of subsidy obtained for each animal was £2 os. 8d.

NOTES AND MEMORANDA.

GERMANY : MARKETING REGULATIONS FOR CATTLE AND BEEF.*

During the past two years the marketing of agricultural produce in Germany has undergone a thorough reorganisation. The marketing of dairy produce and pigs and pig products was regulated in 1933 and 1935, and now the National Union of the German Livestock Industry has issued an Order regulating the marketing of cattle and beef.

The objects of the new order are :—(i) assurance of a regular supply of beef ; (ii) a fair price structure applied to all participating groups of the industry ; (iii) safeguarding of production.

SUPPLIES. To insure regular supplies of beef, a monthly quota has been fixed for slaughterings and meat sales to be observed by all slaughter cattle and beef marketing undertakings. The quota must not exceed 60% of the monthly average of cattle slaughterings and

* Market Supply Committee Note.

sales of beef in the period 1st October, 1934, to 31st March, 1935. This quota system will have the effect of preventing the falling off in supplies which are anticipated as a result of drought of 1934. It is also intended to ensure as equal a distribution as possible of the available mature slaughter cattle between town and country, such as was done last autumn in regard to pigs through similar measures of the National Livestock Union. The peak demand for beef in the towns will be met by imports of fresh and chilled meat so that a sufficiency of supplies will be assured.

Linked up with quota slaughterings and marketing will be the obligation of sending cattle from surplus districts to places where no regulated market exists, so that there shall be no undue favouring of markets. Despatches of animals from the surplus districts will be subject to the approval of the National Livestock Union.

PRICES. The hitherto maximum market prices will be replaced by a system of fixed prices with certain upper and lower limits. Under the new order there has been a slight increase in the top limit for quality beasts like bullocks and heifers, but this will be more than counterbalanced by the lower top price for full-flesh cows, as cows represent an overwhelming proportion of the animals offered for slaughter. Owing to the considerable decrease in the scale of prices for b.c. and d. qualities, the prices paid by the butcher will be lower than before, so that the new regulations will entail no burden on the consumer. The provision of a graduated scale of prices according to category and slaughtering value will also ensure a fair return for quality and prevent an undue advantage being gained in the case of inferior animals at the expense of better class beasts. The policy of the new measure is aimed at assuring for the producer of valuable stall-fed animals a corresponding return for his outlay and efforts, and an avoidance of overpayment for inferior and immature beasts. The trading and processing groups are also assured a sufficient margin for distributing and processing. The presidents of the Slaughter Livestock Marketing Associations are empowered to fix maximum prices for cattle and beef even at the farm and at places outside the regulated markets: these prices must bear a suitable relation to the fixed market prices.

PRODUCTION. The new regulations are calculated to encourage a further increase in the livestock population, which was interrupted by the drought in 1934 and the subsequent shortage of fodder, and thereby ensure the covering of requirements from home resources. Any temporary shortage of supplies which may occur can be made up out of imports by the Reich office for Animals and Animal Products.

Besides the National Union of the German Livestock Industry and its associated offices, all offices of the Reich Food Estate will be called upon to assist in carrying out the present order. All groups engaged in the beef supplies service will also participate. The fixing of the

quota and issuing of slaughtering certificates will thus be entrusted to the butchers' guilds and the trade groups of the meat products industry. The trade groups of the livestock distributors will also participate.

The new measures, it is stated, are of fundamental significance for the furtherance of market regulation in the livestock industry ; they will prevent price increases, which have hitherto automatically occurred in times of shortage, calling for fresh sacrifices on the part of the consumer.

SWITZERLAND : MODIFICATION OF THE MILK₁ SUBSIDY.*

It is reported that the Federal Council has approved the Memorandum in regard to the continuation of assistance to milk producers in the 1936-37 season. The Memorandum, a document of 50 pages, has not yet been published, but references to its contents appear in the "*Neue Zürcher Zeitung*."

According to the Press report, Federal assistance, which provides less than half the total milk subsidy, is to be reduced from 15 to 10 million francs (£990,000 to £660,000), but there will be no basic change in the milk price. The price of milk for cheese manufacture will not be subsidised in a uniform manner, as hitherto. Milk which is suitable for the manufacture of first quality cheese will receive a premium in the form of an excess price. The existing method is said to have led to a deterioration in quality. No reduction in the price of cheese in order to encourage exports is contemplated, since it is held that the value and reputation of Swiss cheese must be maintained. It is recognised that in countries with low purchasing power the price of Swiss cheese will, in any case, be too high.

The reduction in Federal expenditure for support of the milk price is not connected with budgetary retrenchment. The principal reason is that less milk is being produced.† The earlier increase in production which was artificially stimulated by the help of imported feeding stuffs has now ceased. Feeding stuffs are dearer and milk production has been restricted and coincides more with the natural fodder basis. On the other hand, the duty on imported feeding stuffs is providing a contribution towards supporting the milk price.

A chapter in the Memorandum is devoted to the operations of the Cheese Association. The working agreement between the Central Union of Swiss Milk Producers and the Cheese Association will remain in force up to the 31st July next, after which several changes will be

†Production in 1935 amounted to 2,796,000 short tons, as compared with a peak of 2,870,000 short tons in 1934, according to the estimates of the Swiss Milk Commission. The decline in production in 1935 as compared with 1934 became more marked as the year advanced and in December it was 11.4 per cent. smaller than in December, 1934. (See Monthly Crop Report I.L.A. January, 1936, p. 46).

*Market Supply Committee Note.

made. The operations of the Cheese Association show neither a loss nor a profit. Members are entitled only to fixed interest at the rate of $4\frac{1}{2}$ per cent. (hitherto 6 per cent.); any profit made by the Association in excess of the sum required to pay this interest is transferred to the Central Union of Milk Producers.

Reference is also made in the Memorandum to the question of differential treatment in the distribution of subsidies to farmers according to the capital value of their undertakings. This, however, has been found to be impracticable in the case of milk producers.

AGRICULTURAL NOTES.

SEASONAL FARM NOTES.

OATS.—To promote early ripening and facilitate harvesting, the sowing of oats should be completed as soon as possible. Except on rich soils, a full crop of oats will not generally be obtained without proper manuring. The complete manurial dressing given in last month's report, namely, 1 cwt. sulphate of ammonia, 2 cwt. superphosphate and 1 cwt. 30 per cent. potash salts, per statute acre, should be applied to oats on lea ground in poor condition and on land following potatoes. Where, however, the pasture has been enriched by wild white clover, the sulphate of ammonia should be omitted, and the manurial mixture should consist of 2 cwt. superphosphate and 1 cwt. 30 per cent. potash salts per statute acre. This manuring of oats on rich land aids in preventing lodging of the crop.

The dressing of seed oats, prior to sowing, with "Ceresan" or "Agrosan G," as a preventive of seed-borne diseases such as smut and leaf-stripe, is recommended. From 5 to 8 ounces of either of these materials as purchased are sufficient to dress one cwt. of seed. Dressing the seed promotes thicker brairds and leads, in many cases, to increased yields. It has been found also that the rate of seeding with treated seed may be reduced by about one quarter. This reduction in the rate of sowing will more than compensate for the cost of dressing the seed, which is only about $1/6$ per acre.

POTATOES.—The planting of potatoes should be completed during April, if possible. Potatoes which are to be cut for seed should be planted as soon as possible after cutting and precautions taken to prevent the cut surfaces from coming into contact with the artificial manures applied, otherwise "misses" in the crop are liable to occur. In the case of varieties such as Arran Consul and Majestic, whole seed should be planted in preference to cut tubers. Where, however, cut

seed of these varieties is planted, it is advisable to complete the work of opening the drills, manuring, planting and closing the drills on the same day.

Farmers, planting seed from healthy stocks of potatoes, are reminded of the importance of growing these stocks under conditions which will protect them from disease infection during the growing period. The ideal arrangement is to grow healthy stocks in a field apart from the ordinary farm stock of potatoes, but if this cannot be done, a few drills of cabbage or of turnips should be grown between the healthy stock and the farm stock. This practice is an aid in preventing the spread to the healthy stock of diseases, such as leaf roll and mosaic, which may be affecting the ordinary stock.

BARLEY.—It is not yet too late to sow barley, but sowing should be done immediately, if a satisfactory crop is to be obtained. Varieties such as Spratt-Archer, Golden Archer and Old Common (Chevalier) are suitable for growing under Northern Ireland conditions, and a seeding of about 16 stones per statute acre is recommended.

WHEAT.—Brairds of autumn-sown wheat should be harrowed lightly now, and, if in a backward condition, a dressing of 1 cwt. sulphate of ammonia, nitro-chalk, or nitrate of soda applied per statute acre.

FLAX.—On land where it is intended to sow flax, a mixture composed of from 1 to $1\frac{1}{2}$ cwt. muriate of potash and $\frac{1}{2}$ cwt. sulphate of ammonia per acre should be applied several days before sowing the seed. If the land is in good condition, the sulphate of ammonia should be omitted, especially where tall-growing, pure line strains are grown. The results of recent flax variety trials have shown that the new pure strains have given superior results to commercial varieties. Particulars regarding the pure strains included in these trials are given in Leaflets Nos. 1 and 74. These leaflets have been revised recently.

MANGELS.—The advantages of growing a small area of mangels should not be overlooked. These are an excellent food for stock and a supply of them is very useful when turnips are finished. To obtain heavy yields, liberal manuring is necessary. A heavy dressing of from 20 to 25 tons farmyard manure, together with a mixture of 2 cwt. sulphate of ammonia, 4 cwt. superphosphate, and 4 cwt. kainit, per statute acre, should be given. In addition, an application of 1 cwt. nitrate of soda per acre after thinning also benefits the crop. The seed should be sown during April, if possible. In tests carried out over a number of years in Northern Ireland, the Red Intermediate type of mangel has given the heaviest yields.

CABBAGE AND KALE.—Succulent food for cattle during autumn and early winter may be provided, if a small area of Early Drumhead cabbage seed is sown during early April. The seed should be sown at

the rate of from 3 to 4 lb. per statute acre in drills in the same way as turnips, and the plants afterwards singled to about 24 inches apart. Cabbage respond well to liberal manuring, and, in addition, to a dressing of from 20 to 25 tons per acre of farmyard manure, an application of 2 cwt. sulphate of ammonia and 4 cwt. superphosphate per statute acre is recommended. Marrow-stem and thousand-headed kale will also produce heavy yields of green food per acre. These crops require the same manuring as cabbage, and the seed may be sown at the same rate, but the plants need not be singled, but merely thinned in the rows. Supplies of cabbage and kale are particularly valuable for feeding to dairy cows after the animals have been brought in from grass in the autumn.

SEEDS MIXTURES.—The importance of sowing a good mixture of grass and clover seeds may again be stressed. Strict attention should be paid to the composition of the mixture, as this largely determines the quality of the subsequent pasture. Wild white clover should be included in all mixtures where the land is to be laid down to pasture for two or more years. The price of wild white clover seed is very reasonable this year, and the extra cost of its inclusion in the mixture will be well repaid by the improvement affected in the grazing and in the fertility of the land.

It is also necessary, in the production of good pasture, to include seeds of permanent grasses, such as cocksfoot, timothy and rough stalked meadow grass, in the mixture. Dependence on rye grasses alone is a mistake. Information relating to the laying down of land to pasture, along with examples of suitable seeds mixtures for different types of soils, are given in Leaflet No. 40. An article on this subject also appears on page 44 of this report.

PASTURES.—When time permits, and if not already done, pastures should be harrowed and rolled. The harrowing spreads the manure deposited by grazing animals, and prevents rank clumps of grass appearing later. Harrowing will also destroy the seedlings of rushes which at this season are being produced from the seeds deposited by rush plants left uncut last year, and is, accordingly, a useful aid in preventing increased infestation of these weeds.

To encourage the production of early grass, a small area of grassland which has previously been manured with phosphates, should be dressed now with 1 cwt. sulphate of ammonia or nitro-chalk per acre.

SEASONAL LIVESTOCK NOTES.

OX-WARBLE FLY.—To comply with the Ox-Warble Fly Order, the second application of a suitable Derris wash should be applied to cattle between the 12th and the 19th April. It is an offence against the Order if dressing is not done during the period specified. If dressing

is not done during the proper time some of the maggots will escape from the cattle and produce a new brood of warble flies—an occurrence which the Order is designed to prevent. All cattle owners are, therefore, again reminded that it is in their own interests to comply strictly with the terms of the Order.

Three Derris preparations are recommended for dressing the cattle, namely, "Polvo," "Cooper's Warble Fly Powder" and "Paragad," supplies of which can be obtained from most chemists and merchants who trade in agricultural commodities. These preparations should be used according to the directions given with them. Further particulars regarding the preparation and application of these washes are given in Leaflet No. 64 and in Circular No. 13.

STORE CATTLE.—An allowance of concentrates can be fed with advantage to store cattle intended for sale at the commencement of the grazing season. A mixture composed of 3 parts crushed oats, or maize meal, if oats are not available, and 1 part decorticated earthnut cake, fed at the rate of from 2 to 3 lb. per head daily is a cheap and suitable ration for this purpose.

CALF REARING.—Those who are rearing calves are reminded that the feeding of patent calf meals is unnecessary and increases rearing costs. During the first four weeks of the calf's life, whole milk should be given, but after that period separated milk or skim milk may be substituted for the whole milk along with a small allowance, increased gradually, of a mixture of crushed oats and maize meal, or even crushed oats alone, fed dry after the milk. Only oats of good quality should be used for calf feeding purposes, as otherwise digestive troubles may arise. Further particulars regarding calf rearing are given in Leaflet No. 54.

DISHORNING CALVES.—The dishorning of calves intended for sale as beef or stores should not be overlooked. The method, which consists in rubbing the horn "buds" with a stick of caustic potash before the calf is nine days old, is inexpensive and simple to carry out, and is also harmless and painless to the animal. Caustic potash can be obtained from any chemist. Leaflet No. 5 gives full directions regarding dishorning.

CASTRATION AND DOCKING OF LAMBS.—Early castration and docking of lambs should be practised. Both these operations are best performed when the lambs are from three to six weeks old, and can be carried out at the same time. When collecting the lambs for castration and docking, care should be taken to ensure that they do not become heated or overcrowded in the pens as the risk of losses following these operations is increased when such occurs. As a preventive of infection the wounds should be dressed with a mild disinfectant, such as Jeyes' Fluid or Lysol at a strength of one teacupful in ten pints of

water, before the lambs are released to rejoin the ewes. Information relating to castrating and docking is given in Leaflet No. 63.

As lambing proceeds, the ewes and lambs should, if possible, be turned on to a field of fresh pasture to encourage the flow of milk and thus to promote growth in the lambs. A daily allowance of concentrates, such as a mixture of equal parts oats, linseed cake and bran, given to the ewes is also of assistance in promoting the flow of milk.

FEEDING STUFFS.—The attention of farmers is directed to the importance of purchasing only cakes and meals for feeding purposes which are in a fresh condition. The use of stale and mouldy foods frequently causes digestive troubles with serious effects. The smell is a good guide to freshness, and foods having a musty smell should on no account be purchased. Even although it may be possible to obtain such foods at low prices, their use may prove to be expensive in the end.

SEASONAL GARDEN AND ORCHARD NOTES.

SPRAYING OF APPLE TREES.—The first application of Bordeaux mixture for the control of apple scab should be given to apple trees when the buds have burst and the flowers are exposed, but before any of the flowers show colour. A second application should be given just before the flowers open. If caterpillars are present lead arsenate powder, at the rate of $1\frac{1}{4}$ lb. to each 40 gallons should be added to the mixture. If such insects as aphides, apple suckers or capsid bugs are present, 6 fluid oz. of nicotine or 8 oz. of nicotine sulphate should also be added to each 40 gallons of the Bordeaux mixture. Full particulars of the spraying of apple trees are given in Leaflet No. 33.

DISPOSAL OF PRUNINGS.—If not already done, prunings of fruit trees should be collected and burnt to prevent them acting as sources of disease infection for adjacent trees. Even when the trees are healthy, the prunings should always be raked up and burnt instead of leaving them to rot in the orchard, or piling them along fences and hedgerows.

GRAFTING.—The grafting of apple trees should be undertaken whenever the sap is moving freely. The substitution of good varieties for inferior ones is often more quickly accomplished in this way than by replanting.

AMERICAN GOOSEBERRY MILDEW.—Where an attack of American Gooseberry Mildew is anticipated gooseberry bushes of red-fruited varieties should be sprayed just after flowering with a solution of ammonium polysulphide prepared according to the "Wye Formula, 1919," and bushes of yellow or amber varieties

should be sprayed at the same stage of growth with a solution of washing soda. The former solution is prepared by adding $\frac{1}{4}$ pint ammonium polysulphide to 5 gallons of water together with from 2 to 6 oz. of soft soap. The washing soda solution is prepared by dissolving 10 oz. of washing soda in 5 gallons of water and adding $\frac{1}{4}$ pint of skimmed milk. A second application of these sprays should be given two or three weeks after the first. Full particulars of spraying for the control of American Gooseberry Mildew are given in Leaflet No. 49.

BLACKCURRANT MITE.—Blackcurrant bushes which are slightly attacked by Black Currant Mite should be sprayed just before the flowers open, and again immediately after flowering, with a solution of ammonium polysulphide prepared according to the following formula :—

8 fluid oz. ammonium polysulphide ("Wye Formula, 1919"),
6 oz. soft soap,
5 gallons water.

Bushes which are severely attacked should be uprooted and burned.

STRAWBERRIES AND RASPBERRIES.—Plantations of strawberries and of raspberries should now be cleared of all weeds and mulched with strawy manure. Particulars of the cultivation of these fruits are given in Leaflets Nos. 68 and 71, respectively.

VEGETABLES.—Seeds of lettuce, peas, beans and turnips should be sown for succession. Towards the end of April, or early in May, beetroot, French beans, runner beans and vegetable marrow seeds may be sown out-of-doors, and further sowing of peas and broad beans should be made for succession. Leaflet No. 67 deals with the cultivation of vegetables.

FLOWERS.—Flower beds and borders should be cleared of all weeds and other rubbish and left tidy. Seeds of such biennials as wall-flowers, forget-me-nots, Canterbury bells, etc., should be sown during the first fortnight of May.

SEASONAL POULTRY-KEEPING NOTES.

HATCHING.—The hatching of eggs of light breeds should be completed as soon as possible, as pullets of even these breeds which are not hatched by the middle of April will be unlikely to prove profitable as winter layers.

WEANING FROM HEAT.—Great care should be taken when weaning the chickens from heat, as chills are often contracted at that stage and serious losses may be incurred. The temperature of the brooder or hover should be reduced gradually for some time before the heat is

finally removed, so as to minimise the effect of the change. In addition, a platform of flat wooden perches should be provided in the rearing houses. This, as well as preventing huddling and overcrowding also helps to harden the chickens, and permits of air circulating from below. It is also an advantage to place a lamp in the house during cold nights after the chickens have been weaned from heat, to prevent huddling and overcrowding in corners during the night.

FATTENING COCKERELS.—When the chickens have been weaned from heat, the cockerels should be removed from the pullets, penned and fattened off as quickly as possible to permit of advantage being taken of the higher prices which generally are ruling early in the season. A suitable mash for fattening growing cockerels, where separated milk or buttermilk is available, is :—

3	parts	by	weight	bran,
3	"	"	"	pollard,
2	"	"	"	maize meal,
4	"	"	"	Sussex ground oats.

If no milk is available, 1 part by weight fish meal, or meat and bone meal, or $1\frac{1}{2}$ parts of soya bean meal should be added to the above mixture. When using soya bean meal, it is necessary to add 2 lb. of a mineral mixture composed of 3 parts by weight ground limestone and 1 part by weight salt to each cwt. of meal mixture.

FEEDING OF PULLETS.—The pullets should be allowed to roam on free range and given a less stimulating diet than that used when they were younger : not more than 5 per cent. of a protein food, such as fish meal or meat and bone meal, should be included in the growing mash for pullets. This mash may contain up to 30 or 40 per cent. of bran. Forcing mashes containing excessive quantities of protein food should on no account be fed during the growing stages, as the use of such mashes promotes precocious maturity and may ultimately result in increased mortality in the laying flock.

CULLING OF LAYING AND BREEDING FLOCKS.—Once hatching is completed, the breeding flock should be carefully examined, and cockerels and hens no longer required for breeding purposes sold off. Hens which have proved themselves to be exceptionally good breeders should, however, be retained. Such birds are worthy of their place in the breeding pen for another season, although the number of eggs produced by them may be smaller than that obtained from two-year-old birds.

The laying flock should also be gone over carefully, and any birds showing defects and lack of vigour, along with the poor producers, culled out and sold. Egg prices now do not justify the keeping of such birds.

CLEANING AND DISINFECTION OF LAYING HOUSES.—Laying houses should be thoroughly cleaned and disinfected now. An application to the interior of the house of limewash, to which paraffin oil has been added in the proportion of $\frac{1}{2}$ pint to each gallon of wash, will not only brighten up the house, but also aid in keeping infestations of parasites, such as red mite, in check throughout the summer months.

TURKEYS.—It is a wise precaution to set the first dozen eggs, as soon as they are laid, to test for fertility. Much disappointment may be avoided later if this is done. It may happen that the male bird has failed to fertilise the eggs, and, if this is discovered in time, another bird may be substituted before the season is too far advanced.

In rearing turkeys, it is of the utmost importance that the parent stock be healthy, otherwise there is a grave risk that they will pass on diseases, such as blackhead, to their broods. Similar precautions should also be taken in the case of ordinary hens used for hatching and rearing turkeys. Hens which have been running on ground that is known to be free from diseases should only be used. Useful information regarding the hatching and rearing of turkeys is given in Leaflet No. 37.

PRESERVATION OF HEN EGGS.—This is a suitable time for preserving eggs for winter use, now that prices are low. Only absolutely fresh, infertile eggs, with shells of good texture, should be selected for preservation. The water glass method of preservation is the most convenient. A solution of 1 lb. of water glass in $1\frac{1}{2}$ gallons of water in a clean three-gallon receptacle is sufficient for 10 dozen eggs. The top layer of eggs should not be less than two inches below the surface of the liquid. The receptacle containing the eggs should be covered with a light lid or a piece of waxed paper to prevent evaporation, and should be stored in a cool place.

SEEDS MIXTURES FOR HAY AND PASTURE.

Farmers will now be considering the purchase of grass and clover seeds for sowing land down to temporary pasture. Unfortunately, in the past, the important matter of seeds mixtures was not given the attention it deserved and the result of this failure to appreciate the absolute necessity to sow a suitable mixture of grasses and clovers, if a good pasture is to be obtained, is seen in the many poor, thin, weedy pastures which are prevalent throughout the country.

It is feared that many farmers regard temporary pasture as being of secondary consideration and that they are concerned chiefly with the prospect of getting good crops of hay and, perhaps, of ryegrass seed. The object of getting good hay crops is not antagonistic to the

production of good pastures, provided the principles underlying the obtaining of both are understood and adopted. It is far easier to produce a good crop of hay than to produce a good pasture, but the production of good pasture need not necessarily mean the failure to obtain a good crop of hay or of ryegrass seed.

Temporary pasture is a crop which occupies the ground for three, four, or more years. This being so, it should be the aim and object of every farmer, when laying land down to pasture, to do everything possible to ensure that this crop shall be a good one; besides, the quality of the pasture at the time the field is again ploughed for a rotation of crops will influence for good or bad the yields of these crops. This, in itself, should be sufficient justification for the little extra expense involved in the purchase of suitable mixtures of seeds. It is well-known, for example, that pastures containing wild white clover, not only provides more and better grazing for stock than those which do not, but such fields, when ploughed up again, produce superior yields of crops and do not normally acquire so much nitrogenous manure as those in which wild white clover was absent or poorly represented. It is seen, therefore, that a suitable seeds mixture may, indirectly, save expense in the purchase of manures, later.

Probably the most frequent mistake made in the composition of seeds mixtures is the omission of seeds of species of permanent grasses and clovers. The ryegrasses are not permanent—Italian ryegrass is very short-lived—and while these produce good crops of hay, they cannot be depended on to form good pastures. Of the permanent species of grasses, cocksfoot, timothy, rough-stalked meadow grass and meadow fescue are the most useful, while of the clovers, wild white clover is truly permanent and red and alsike clovers, short-lived. The permanent species of grasses do not form seed in the first year as do the ryegrasses and, accordingly, their inclusion in a mixture where it is proposed to save perennial ryegrass seed will not interfere with the purity of the sample of that seed. Where Italian ryegrass seed is saved, it is not usual to leave the land in pasture afterwards, but to plough it up again for another crop.

It is impossible to prescribe a mixture of seeds to suit all soils and conditions, but some general rules may be laid down.

- (1) Do not sow ryegrasses in excess.
- (2) Include an adequate proportion of permanent grasses, particularly cocksfoot.
- (3) Include wild white clover.
- (4) Do not sow "complicated" mixtures. Simple mixtures of carefully chosen strains of a few species are much to be preferred.
- (5) Do not sow mixtures of unknown constitution.

The following mixtures should be regarded as types only, and will serve as a guide.

FOR ONE YEAR'S HAY AND TWO OR MORE YEARS' GRAZING (SEED NOT SAVED).

Pounds per statute acre.

Species.	Standard Mixture.	Mixtures for Special Purposes.		
	Average Soils.	Cold Clay Soils.	Peat Soils.	Light Thin Soils.
<i>Perennial Ryegrass.</i>				
Irish or Scottish	12 to 15	18	14	20
<i>Italian Ryegrass.</i>				
Irish	5 to 7	—	5	—
<i>Cocksfoot.</i>				
Danish	8 to 10	6	5	10
<i>Timothy.</i>				
Canadian or Scottish ..	4 to 5	8	6	—
<i>Rough-stalked Meadow Grass.</i>				
American	1	2	2	2
<i>Crested Dogstail.</i>				
Irish	—	3	3	3
<i>Red Clover.</i>				
English Broad	1	—	—	—
Montgomery, Cornish Marl or English late-flowering ..	1	—	—	1
<i>Alsike Clover.</i>				
Canadian	1	2	2	1
<i>Wild White Clover.</i>				
Irish or English	1	1	1	1
Total (lb. per statute acre) ..	34 to 42	40	38	38

FOR ONE YEAR'S HAY AND TWO OR MORE YEARS' GRAZING ON MEDIUM SOILS (PERENNIAL RYEGRASS SEED SAVED).

1½ to 1½ bushels (35 to 42 lb.) Perennial Ryegrass
 8 „ Cocksfoot
 3 „ Timothy.
 ½ „ Broad Red Clover
 ½ „ Late-flowering Red Clover
 1 „ Wild White Clover

—
 Total 48 to 55 lb. per statute acre.

Red clover should be omitted altogether in districts where it tends to form too large a proportion of the herbage.

ANNOUNCEMENTS AND REMINDERS.

The second application of a suitable Derris wash for the destruction of ox-warble fly maggots in cattle should be applied during the period 12th to 19th April. Complete extermination of this pest can only be obtained by concerted action on the part of every cattle owner. Neglect to dress infested cattle is an offence against the Warble Fly Order.

The dishorning of young calves intended for sale as beef or stores should be carried out with caustic potash. Hornless cattle are worth more than those possessing horns.

Use good mixtures of grasses and clover seeds when laying down land to grass; useful grasses will not grow unless they are sown and the good mixture is the cheapest in the end. If in doubt as to the most suitable mixture to use, consult the Agricultural Instructor for the district. He will visit and advise on request.

Spray apple trees to prevent apple scab. Timely and thorough spraying is an insurance against this disease and an assurance of bigger and better crops of fruit.

Separate the cockerels and pullets in chicken flocks as soon as the sexes can be distinguished. Place the pullets on free range and feed them with the object of producing normal development. Forcing mashes will promote precocious maturity and lead to increased mortality.

Supplies of the annual Reports, published by the County Committees of Agriculture, are now available and copies can be obtained free from the Secretaries of these bodies, on request. These reports contain the most up-to-date information regarding agricultural matters, poultry-keeping, dairying and fruit-growing.

Copies of the leaflets mentioned in this Report can be obtained free, on request.

CLASSES.

The following classes in Poultry-keeping and in Butter and Cheese-making have been arranged by the County Committees of Agriculture.

POULTRY-KEEPING.

County.	Day and Date of Commencement of Class.	Centre.	Time at which Class is held.
Londonderry	Monday, 30th March	Grove Orange Hall, Garvagh	p.m. 7 to 9
Tyrone ..	Monday, 20th April	Drumlish P.E. School, Dromore	6.0
„ ..	Monday, 20th April	Crosscavanagh P.E. School, Galbally Pomeroy.	7.0

BUTTER AND CHEESE-MAKING.

Londonderry	Monday, 27th April	Mr. Morrison's Barn, Drumalief, Limavady.	p.m. 7.30 to 9.30
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Each of the above classes will be held for a period of from three to five weeks' duration.

FOURTEENTH EGG-LAYING TEST AT STORMONT.

RESULTS TO END OF SIXTH PERIOD.

The sixth period of four weeks, half way stage, ended on the 20th March last. There was a definite increase in egg production, as practically all the birds which were in moult are now in lay.

In the table which follows, is given the average egg production per bird during the sixth period and during the six periods the test has been in progress. The average production is shown, both on the basis of the 912 birds originally penned and on the basis of the 877 birds which were alive at the end of the period. Further, the table shows the averages of the total number of eggs laid and of the number of scoring eggs laid.

	During the 6th period.		During all six periods.	
	Based on 912 birds originally penned.	Based on 877 birds alive on 20th March.	Based on 912 birds originally penned.	Based on 877 birds alive on 20th March.
Average total number of eggs laid	18.2	18.9	85.4	87.7
Average number of scoring eggs, <i>i.e.</i> , super grade and 1st grade, laid	16.6	17.2	71.1	73.2

These figures reveal a very satisfactory position regarding egg size. Only eggs which weigh 2 ounces or more are now counted for scoring purposes right from the start of the test, and it is seen from the figures in the table that during the 168 days the test has been in progress, the average total number of eggs below 2 ounces each laid by each bird was 14.3, when no allowance for deaths is made and 14.5 when allowance is made for deaths. This means that only 16.7 per cent. of all the eggs laid were less than 2 ounces each in weight.

The figures also show that the majority of the birds which died had not contributed very much to the average egg production.

Seven birds died during the sixth period bringing the total number of deaths from the start of the test to the end of that period to 35. This represents an average mortality rate of 3.8 per cent. The mortality rates in respect of the different sections are as follows:—

1, White Wyandottes, 6.1% ; 2, White Leghorns, 6.2% ; 3, Rhode Island Reds, 1.3% ; 4, Any other Pure Breed, 3.6% ; 5 (a), Station-holders' White Wyandottes, 2.6% ; 5 (b), Station-holders' White Leghorns, 6.6% ; 5 (c), Station-holders' Rhode Island Reds, 2.3% ; 6, Clubs' Section, 5.9%.

The following are particulars of the leading pens in each Section.

Section as at the end of the period under review :—

SECTION 1.—WHITE WYANDOTTES (OPEN). 30 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Numbers of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	3	Mrs. H. G. Darley, Trory, Ballinamallard, Co. Fermanagh.	335	322	75	657
2	11	Mr. J. Hall, Lilac Cottage, Donacloney, Co. Down.	515	115	13	630
3	7	Lieut.-Col. J. P. Galbraith, Clanabogan, Omagh, Co. Tyrone.	213	364	68	577

SECTION 2.—WHITE LEGHORNS (OPEN). 8 PENS.

1	37	Mr. J. Waugh, Ballyrickard, Kilwaughter, Co. Antrim.	195	256	84	451
2	34	Mrs. E. Johnston, Craigboy, Donaghadee, Co. Down.	272	175	89	447
3	33	Mr. W. Gunning, Inglenook, Ballywalter, Co. Down.	228	192	147	420

SECTION 3.—RHODE ISLAND REDS (OPEN). 38 PENS.

1	75	Mrs. E. R. Dunwoody, Benmore, Islandmagee, Co. Antrim.	437	193	27	630
2	70	Miss R. L. Sinclair, Ballybirnie, Holyhill, Strabane, Co. Tyrone.	318	280	74	598
3	59	Mrs. J. McNeill, Drain's Bay, Larne, Co. Antrim.	424	161	21	585

SECTION 4.—ANY OTHER PURE BREED (OPEN). 14 PENS.

Position.	No. of Pen.	Name and Address of Owner.	Numbers of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	83	Mrs. H. W. Merrick, Agivey House, Aghadowey, Co. Londonderry.	322	217	38	539
2	82	Miss C. C. Meara, Coalisland, Co. Tyrone.	132	346	45	478
3	81	Mrs. T. J. McLaren, Ballykeel, Sixmilecross, Co. Tyrone. (All Light Sussex.)	180	221	104	401

SECTION 5 (a).—WHITE WYANDOTTES (STATION-HOLDERS). 13 PENS.

1	95	Mrs. R. McCullough, Bruslee, Ballyclare, Co. Antrim.	416	222	33	638
2	99	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down.	364	245	94	600
3	94	Miss M. McAllister, Backnamullagh, Dromore, Co. Down.	415	129	68	544

SECTION 5 (b).—WHITE LEGHORNS (STATION-HOLDERS). 10 PENS.

1	107	Mr. P. King, Leitrim, Banbridge, Co. Down.	394	115	12	509
2	108	Mrs. J. Knox, Shanmullagh, Ederney, Co. Fermanagh.	314	142	36	456
	104	Mrs. W. Crawford, Redergan, Beragh, Co. Tyrone.	288	168	47	456
3	109	Mrs. M. Noble, Roundpark House, Killyeraph, Lisnaskea, Co. Fermanagh.	365	65	10	430

SECTION 5 (c).—RHODE ISLAND REDS (STATION-HOLDERS). 22 PENS.

1	120	Mrs. M. D. Bell, Woodview, Moneymore, Co. Londonderry.	389	192	38	581
2	118	Miss M. L. Fleming, Ballymenagh, Dungannon, Co. Tyrone.	405	173	23	578
3	125	Mrs. M. McClintock, Laymore, Ballymena, Co. Antrim.	176	369	92	545

SECTION 6.—POULTRY CLUBS AND YOUNG FARMERS' CLUBS. 17 PENS.

Position.	No. of Pen.	Name of Club.	Numbers of Eggs Laid.			Test Score Value.
			Super Grade.	First Grade.	Below First Grade.	
1	149	Banbridge and District Poultry Club. (Rhode Island Reds.)	336	230	50	566
2	136	Ballywalter Young Farmers' Club. (White Wyandottes.)	275	281	60	556
3	141	Ballyclare Poultry Club. (White Leghorns.)	256	260	62	516

The "Test Score Value" means the total of the super grade and first grade eggs. Eggs which weigh less than 2 oz. each are graded as "below first grade" throughout the entire test period.

The pen of White Wyandottes entered by Mrs. Darley, which is leading in Section 1, retains the position of first place in the entire Test, while the pen of White Wyandottes entered by Mrs. McCullough and leading in Section 5 (a) is second.

SCHOOLS NEWS.

ULSTER DAIRY SCHOOL, COOKSTOWN.

The first term of the year 1936 ended on 20th March last. As a result of the examinations held at the end of the term, the following pupils, who had completed the ordinary school course of three terms, were successful in qualifying for certificates in Poultry-Keeping, Dairying and Rural Housewifery:—

- Miss M. J. Elliott, Drumconnis, Ballinamallard.
- „ E. E. Ewart, Knockduff House, Jerrettspass.
- „ M. J. Hill, Ollarview, Ballyclare.
- „ I. H. P. Iago, Croft Cottage, Ballygally.
- „ A. M. Johnston, Tully Farm, Strangford, Downpatrick.
- „ E. R. McClay, Blackleas, Ballybofey.
- „ G. H. Orr, Ballyharry, Newtownards.
- „ M. E. Stewart, Moymucklemurray, Moneymore.

For the term which commenced on 31st March, the following new pupils were admitted to begin the course of training:—

- Miss E. Agnew, Groggan, Randalstown, Co. Antrim.
- „ M. Baxter, Donaghmore, Co. Tyrone.
- „ E. V. Berkeley, Poplar Hill, Tullyhogue, Co. Tyrone.
- „ A. M. Boyd, Carncullagh, Dervock, Co. Antrim.

- Miss R. M. Bradley, Tirhugh, Swatragh, Co. Londonderry.
 „ E. M. Bunting, Tully, Glenarm, Co. Antrim.
 „ S. A. Corry, Mountfield, Omagh, Co. Tyrone.
 „ A. Donnelly, Ballyman, Swatragh, Co. Londonderry.
 „ E. Dugan, Tullyclunagh, Fintona, Co. Tyrone.
 „ E. Higgins, Lignamonagh, Martinstown, Co. Antrim.
 „ E. Lowry, Gortaheron, Portglenone, Co. Antrim.
 „ M. E. McNeill, Moybrick, Dromara, Co. Down.
 „ H. E. Moffitt, Belragh, Aughnacloy, Co. Tyrone.
 „ M. L. Morrison, Springfield, Macleary, Macosquin, Co. Londonderry.
 „ K. F. O'Hart, Corsale, Newtownbutler, Co. Fermanagh.
 „ R. Patterson, Dublin Road, Newtownstewart, Co. Tyrone.
 „ J. Robinson, Beltoy, Larne, Co. Antrim.

Applications for admission to the term which begins on 21st July next are now being received by the Ministry. Girls intending to take a course of training at this school are advised to send applications to the Ministry as soon as possible, as applicants are admitted in the order in which their applications are received. The prospectus of the School contains an application form and copies of the prospectus may be obtained free of charge, from the Secretary, County Committee of Agriculture, from the Poultry Instructor, from the Lady Superintendent, Ulster Dairy School, Cookstown, or from the Ministry of Agriculture, Stormont, Belfast.

NORTH WEST SCHOOL, STRABANE.

The first term of the year 1936 also ended at this School on 20th March last, and the class consisted of 24 pupils who held scholarships from the different County Committees of Agriculture. The number of scholarship holders from each County was as follows:—

Co. Antrim	2
„ Armagh	2
„ Down	3
„ Fermanagh	3 (Including 1 from the Anne Hall Bequest).
„ Londonderry	7 (Including 1 from the Anne Hall Bequest).
„ Tyrone	7

The following pupils are now in residence at the School as scholarship holders for the term 31st March–19th June:—

Co. Antrim:—

- Miss E. O'Kane, Turreagh, Armoy.
 „ C. C. Reid, Marini Road, Carnlough.
 „ K. Smyth, Monaclough, Armoy.

County Armagh:—

- Miss R. I. Canning, Anncurk, Newtownhamilton.
- „ E. B. Greer, Mullintur House, Tullysaran, Armagh.
- „ H. McKinstry, Drumconnell, Armagh.
- „ E. Wilson, Ballyscandle House, Lisadian, Armagh.

County Fermanagh:—

- Miss E. C. Cassidy, Sandhill, Derrygonnelly.
- „ R. Doyle, Cavantillycormick, Ballinamallard.
- „ E. F. Keys, Drumschool, Irvinestown.

County Londonderry:—

- Miss M. M. Connell, Ballyrorey, Tullintrain.
- „ M. J. Long, Kincull, Claudy.

County Tyrone:—

- Miss K. Alison, Killymore, Newtownstewart.
- „ S. K. Gallagher, Cornamuck, Dromore.
- „ M. M. Keenan, Alworries, Skeskinshule, Omagh.
- „ A. Kelly, Creggnadeveskey, Carrickmore.
- „ M. J. McGlaughlin, Ballygroogan, Cookstown.
- „ W. Murphy, Bodoney House, Trillick.

County Committees of Agriculture are offering a limited number of free scholarships to this School for the session which begins on 21st July next. Girls desiring to be considered for the award of these scholarships should send in their applications as soon as possible to the Secretary, County Committee of Agriculture, for the County in which they reside. Copies of the prospectus of the School may be obtained, free of charge, from the Secretary of the County Committee of Agriculture, the Poultry Instructor, the Lady Superintendent, North West School, Strabane, or the Ministry of Agriculture, Stormont, Belfast.

THE WARBLE FLY ORDER.

Reports from the Ministry's Veterinary Officers indicate that, on the whole, the first dressing has been well carried out. Farmers have recognised the value of the Order and have generally been keen to put it into effective operation, but some points have arisen which require to be cleared up. The first concerns infested animals shortly to be presented for certification and slaughter under the Beef Subsidy Scheme. These cattle must be treated in the ordinary way. The purpose of the Order is to eradicate the warble fly. This object can only be achieved by killing all flies wherever they may be found and leaving no live maggots, whether they infest an animal shortly to be slaughtered or not, to form the nucleus of a new generation. Some of the reports also suggest that farmers are not keeping to the scheduled

dressings periods. The interval of a month between the dressings is designed to give the maximum kill, having regard to the life cycle of the fly, and farmers should carefully observe this important provision in the Order. Finally, it must again be emphasised that only recommended preparations should be used and that on no account should any ready mixed dressing be bought.

Second compulsory dressing period—APRIL 12-19.

Third " " " —MAY 10-17.

Fourth " " " —JUNE 7-14.

From now onwards farmers with infested cattle that have not been treated will be liable to prosecution.

REVISION OF LEAFLETS.

In the Monthly Report for February, there appeared a list of leaflets which were under revision. Copies of these, in the revised form, are now available for distribution. In the meantime the following additional leaflets have been revised and copies of the revised editions will be available in due course.

No. 10. Fruit Tree Pests—Capsid Bugs.

„ 15. Suitable Varieties of Fruit.

„ 34. The Pruning of Apple Trees.

„ 40. The Laying Down and Management of Temporary Pastures.

„ 51. Butter-making on the Farm.

„ 66. Seed Testing facilities for Traders.

„ 74. New Pure Strains of Flax.

PRICES OF FEEDING STUFFS.

The following table shows the average retail prices per cwt. of Feeding Stuffs at 1st April, 1936, with comparative figures for the corresponding date in 1935.

		1935.						1936.					
		Price per cwt.	Protein equivalent	Price per unit of protein equivalent	Starch equivalent	Price per unit of starch equivalent	Price per cwt.	Protein equivalent	Price per unit of protein equivalent	Starch equivalent	Price per unit of starch equivalent	Price per cwt.	Protein equivalent
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
STARCHY FOODS:													
Maize (whole)	..	4 11	6.8	14 5	81.5	1 2½	5 9	6.8	16 11	81.5	1 5	5 9	6.8
Maize Meal	..	5 4½	6.8	15 9½	81.5	1 4	6 1	6.8	17 11	81.5	1 6	6 1	6.8
Bran, Red	..	7 1	10.0	14 2	45.3	3 1½	7 0	10.0	14 0	45.3	3 1	7 0	10.0
Bran, White	..	8 6	10.0	17 0	45.3	3 9	8 0	10.0	16 0	45.3	3 6	8 0	10.0
Pollard, Brown	..	7 4	11.0	13 4	71.2	2 1	7 0	11.0	12 9	71.2	1 11	7 0	11.0
Pollard, White	..	8 3	11.0	15 0	71.2	2 4	7 11	11.0	14 5	71.2	2 3	7 11	11.0
Barley Meal	..	6 11	6.2	22 4	69.7	2 0	8 0	6.2	25 10	69.7	2 4	8 0	6.2
Oats	..	6 6	7.6	17 1	60.0	2 2	5 6	7.6	14 6	60.0	1 10	5 6	7.6
Wheat (whole)	..	7 10	9.6	16 4	72.0	2 2	—	9.6	—	72.0	—	—	—
PROTEIN FOODS:													
Linseed Cake, home-made	..	10 3	25.0	8 2½	71.8	2 10	10 9	25.0	8 7	71.8	3 0	10 9	25.0
Linseed Cake, foreign	..	9 5	25.0	7 6	71.8	2 7½	9 9	25.0	7 10	71.8	2 9	9 9	25.0
Linseed Cake Meal	..	9 7	25.0	7 8	72.8	2 7½	10 3	25.0	8 3	72.8	2 10	10 3	25.0
Cotton Cake, decorticated	..	9 0	35.0	5 2	71.2	2 6	9 3	35.0	5 3	71.2	2 7	9 3	35.0
Cotton Cake, undecorticated	..	6 6	17.0	7 8	39.2	3 4	7 0	17.0	8 3	39.2	3 7	7 0	17.0
Earth Nut Cake, decorticated	..	8 8½	41.0	4 3	73.0	2 5	8 7	41.0	4 2	73.0	3 4	8 7	41.0
Soya Bean Meal (extracted)	..	9 2	38.0	4 10	64.0	2 10½	8 9	38.0	4 8	64.0	2 9	8 9	38.0
Bean Meal	..	8 3	20.0	8 3	66.0	2 6	8 3	20.0	8 3	66.0	2 6	8 3	20.0
Fish Meal (60% protein)	..	15 4½	53.0	5 9½	58.9	5 3	16 11	53.0	6 5	58.9	5 9	16 11	53.0
Meat and Bone Meal (40% protein)	..	9 4	36.2	5 2	44.0	4 3	9 10	36.2	5 5	44.0	3 8	9 10	36.2
Meat and Bone Meal (60% protein)	..	14 1	54.9	5 1½	61.3	4 7	14 9	54.9	5 4	61.3	4 10	14 9	54.9
OTHER FEEDING STUFFS:													
Linseed, whole	..	15 4	19.0	16 2	119.2	2 7	15 9	19.0	16 7	119.2	2 8	15 9	19.0
Brewers' Grains (dried)	..	6 6	13.0	10 0	50.3	2 7	6 6	13.0	10 0	50.3	2 7	6 6	13.0
Palm Nut Cake	..	7 11	17.0	6 11½	70.2	1 8	7 10	17.0	9 3	70.2	2 3	7 10	17.0
Palm Nut Meal	..	8 1	17.0	9 6	78.0	2 1	7 9	17.0	9 1	78.0	2 0	7 9	17.0
Potatoes	..	3 9	0.6	125 0	18.0	4 2	1 7	0.6	52 9	18.0	1 9	1 7	0.6
Oat Straw	..	2 5	0.9	53 8½	20.0	2 5	1 11	0.9	42 10	20.0	1 11	1 11	0.9
Meadow Hay	..	2 6½	4.6	11 2	37.0	1 4½	2 0	4.6	8 10	37.0	1 1	2 0	4.6
Turnips (Swede)	..	0 8½	0.7	20 3	7.0	2 0	0 8	0.7	19 1	7.0	1 11	0 8	0.7

One of the objects of the foregoing table is to guide farmers in the economic purchase of feeding stuffs.

Ignoring their mineral content, the valuable constituents of any feeding stuff, whether home-grown or purchased, consist of :—

- (1) Carbohydrates—a group of substances which include materials such as starch, sugar, etc. They supply heat or energy to the animal, and the surplus is stored by the animal as fat.
- (2) Oil—which also provides heat or energy, the surplus being stored as fat. For this purpose oil is approximately $2\frac{1}{2}$ times as valuable as the carbohydrates, but its presence in the ration in excessive quantities may lower the digestibility of the ration and cause digestive troubles.
- (3) Protein—The group of bodies termed protein or albuminoids contain nitrogen. Protein is the only ingredient of a feeding stuff which can produce flesh or muscle, and hence its special importance.

All animals require a certain amount of each of the above constituents, but the relative amounts depend upon the class of stock. Thus, for example, a two-year-old fattening bullock requires a relatively small amount of protein (flesh forming material). Its ration should consist mainly of foods rich in carbohydrates, i.e., fat producing substances. On the other hand, a dairy cow is producing milk, which is a substance rich in protein, and as the protein, that is flesh forming material in milk, can only be derived from the protein in the food, the ration for the dairy cow must contain considerably more protein than that for the fattening bullock.

There are very wide differences in the composition of feeding stuffs, both home grown and purchased. Some, such as oats and maize, are rich in carbohydrates, and, therefore, particularly valuable for fattening purposes, whilst others, such as decorticated cotton cake, earthenut cake and linseed cake, are rich in protein, and are chiefly valuable for their flesh and milk-producing properties.

In the following table the composition of some of the more commonly used feeding stuffs is shown :—

PERCENTAGE COMPOSITION.

	Water.	Protein.	Oil.	Carbohydrates.
Turnips (Swede)	88	1	0.2	9
Potatoes	75	2	0.1	21
Oat Straw	14	4	2	37
Meadow Hay	10	10	3	45
Pasture Grass	80	3.5	0.8	10
Cabbage	89	1.5	0.5	8
Fattening Foods :				
Oats	13	9	6	80
Maize Meal	12	10	4	70
Barley Meal	13	12	2	66
Flesh Forming Foods :				
Linseed Cake	11	30	10	35
Decorticated Cotton Cake	9	40	9	26

The farmer frequently asks what is the cheapest feeding stuff to buy. It is, however, often very difficult to give a direct answer. Much depends upon what the feeding stuff is required for, whether for fattening or milk production. Again, maize and oats are essentially fattening foods, whilst decorticated cotton cake is a flesh-forming food, and it would be just as futile to use the cost per ton to compare their values as it would be to use the cost per ton to compare the values of, say, sulphate of ammonia and superphosphate.

Foods of similar composition can, however, be compared, and it is possible for the enterprising farmer to effect considerable economies, not only in the use of home-grown feeding stuffs, but particularly in the purchase of concentrated feeding stuffs, by studying the market prices.

The starch equivalent figure is a measure of the energy, heat or fat producing value of the feeding stuff, and shows the number of pounds of starch which would be required to give the same heat or energy as 100 lb. of the feeding stuff. For example, the table on page 55 states that the starch equivalent of maize meal is $81\frac{1}{2}$, or, in other words, 100 lb. of maize meal will provide as much heat or energy as $81\frac{1}{2}$ lb. of pure starch.

The protein equivalent figure shows the number of pounds of digestible flesh or muscle producing material in 100 lb. of each of the feeding stuffs listed.

PRICES OF FERTILISERS.

The following table shows the ranges of retail cash prices of fertilisers per ton at 1st April, 1936.

		Cost of unit of fertilising ingredient at average of range of prices shown.		
		Nitrogen	Phos. Acid	Potash
Nitrogenous Manures.				
Sulphate of Ammonia (20.6%N)	£7 5 0 to £7 15 0	7/2		
Nitro Chalk (15.5%N)	7 10 0 to 8 5 0	10/2		
Nitrate of Soda (15%N)	7 12 6 to 8 10 0	10/9		
Phosphatic Manures.				
Superphosphate (16% S.P.A.)	£3 10 0 to £4 0 0		4/8½	
Semsol (5% S.P.A. 15½% P.A.)	3 0 0 to 3 15 0		4/4½	
Basic Slag (18% P.A.)	3 15 0 to 4 0 0		4/3½	
Gafsa Mineral Phosphate (26% P.A.)	2 10 0 to 3 5 0		2/2½	
Potash Manures.				
Kainit (14%P)	£3 0 0 to £4 5 0			5/2½
Potash Salts (20%P)	4 0 0 to 4 10 0			4/3
Potash Salts (30%P)	5 0 0 to 5 10 0			3/6
Muriate of Potash (50%P)	7 10 0 to 8 10 0			3/2½
Miscellaneous.				
Agricultural Salt	£1 5 0 to £3 10 0			

Abbreviations : N=Nitrogen. S.P.A.=Soluble Phosphoric Acid.
P.A.=Phosphoric Acid. P=Potash.

The cost of the unit of fertilising ingredient is determined by dividing the price per ton by the percentage of the ingredient contained in the manure, and this method of determining values is the only sound basis on which two grades of a manure which supplies the same fertilising ingredient can be compared. The price per ton is not a reliable guide as to which is the better value for money. For example, in the table of prices it is seen that the average of the range of prices for 14% Kainit is £3 12s. 6d. per ton, and for 30% Potash Salts £5 5s. od. per ton, and it might be concluded that the Kainit was the better value for money. This is not so. The 30% Potash Salts contains more than twice as much Potash as the Kainit, and is, therefore, a cheaper source of potash when the price is even double that at which the Kainit is offered. The cost of a unit of Potash in the 30% Potash Salts is seen to be only $\frac{3}{6}$, whereas the cost of a unit of Potash in Kainit is $5\frac{1}{4}$. At the prices ruling for these manures, 30% Potash Salts is, therefore, better value for money than Kainit. Similarly, it is seen that at the prices prevailing Gafsa Mineral Phosphate is a cheaper source of Phosphoric Acid than Basic Slag, and that Sulphate of Ammonia is the cheapest source of Nitrogen.

In connection with the costs of the units of Phosphoric Acid as shown in the table on page 57 it should be noted that in the case of Superphosphate, the cost is that of a unit of Soluble Phosphoric Acid, whereas in the cases of Basic Slag, Semsol and Gafsa Mineral Phosphate the figures represent the cost of a unit of insoluble Phosphoric Acid. It would not, therefore, be correct to compare the unit price of the phosphoric acid in Superphosphate with those of the phosphoric acid in the other three.

PRICES OF AGRICULTURAL SEEDS.

The following table shows the average retail cash prices of seeds at 1st April, 1936, with comparative figures for the corresponding date in 1935 and 1934:—

	1936	1935	1934
Corn (Seed) :			
Wheat (Irish Grown) per cwt.	s. d. 8 6	s. d. 9 0	s. d. 8 6
„ (Imported) „	12 0	11 4	12 0
Oats (Irish grown) „	7 4	7 8	7 11
„ (Imported) „	9 6	10 0	9 11
Barley (Irish grown) „	8 11	9 11	10 0
„ (Imported) „	11 0	11 3	10 9
Root and Green Crops (Seed) :			
Turnips (Swede) per lb.	1 11	2 6	2 0
„ (Aberdeen) „	1 5	1 6	1 6
Mangels „	1 7	1 6	1 5
Carrots „	4 10	5 3	4 10
Clover Seeds :			
Red „	0 11	1 0	1 2
White „	1 1	1 1	1 4
Wild White (Kentish) „	3 11	4 10	4 10
Alsike „	1 5	1 6	1 0
Flax Seed :			
Commercial Varieties :			
Dutch per bag	45 9	47 6	45 0
Pernau „	46 0	52 8	47 0
Riga „	46 0	48 9	46 3
Pure Line (Blue Flowering) Varieties :			
Gossamer per cwt.	70 0	— —	— —
Liral Crown „	73 9	— —	— —
Liral Dominion „	73 0	— —	— —
Liral Monarch „	72 6	— —	— —
Stormont Cirrus „	75 0	— —	— —
White Flowering Concument „	63 4	— —	— —
J. W. S. „	66 3	67 6	65 0
Grass Seed :			
Irish Perennial:			
28 lbs. to bushel per bushel	6 2	10 1	9 10
26 „ „ „	5 8	10 0	9 2
Scotts Perennial:			
28 lbs. to bushel „	7 3	10 11	10 10
26 „ „ „	6 8	10 6	10 0
Irish Italian:			
22 lbs to bushel „	5 3	9 11	10 2
20 „ „ „	5 6	— —	9 9
French Italian:			
22 lbs to bushel „	6 5	10 8	11 7
Cocksfoot per lb.	0 6	0 8	0 8
Meadow Fescue „	0 7	1 3	0 8
Timothy „	0 6	1 1	0 7
Potatoes :			
Epique per cwt.	5 0	3 9	3 6
May Queen „	13 0	6 8	6 10
British Queen „	5 9	3 8	3 5
Arran Victory „	4 10½	2 8	2 5
Kerr's Pink „	4 7	2 6	2 3
Up-to-date „	4 6	2 3	2 9

PRICES OF FAT STOCK.

The following are the average prices per live cwt. of bullocks and heifers, sold at Belfast Auction Marts during each of the five weeks ended 31st March, 1936:—

Week ended.	Bullocks.				Heifers.			
			s.	d.			s.	d.
3rd March	..	..	33	3	..	..	32	9
10th March	..	..	33	6	..	..	34	6
17th March	..	..	33	0	..	..	33	9
24th March	..	..	33	3	..	..	33	0
31st March	..	..	33	9	..	..	33	9

PRICES OF LIVE STOCK

Average Prices of Live Stock at Fairs during the Month of March, 1936.

Date	Fair.	Calves (under 9 months.)	Store Cattle.	Fat Cattle (18 months and over).	Springers.		Milch Cows.	Fat Lambs (under 12 months old).	Fat Sheep (over 2 years old.)	Young Pigs.
					Cows.	Heifers.				
		Per Head	Per Cwt. Live wgt.	Per cwt. Live wgt.	Per head	Per head	Per head	Per head	Per head	Per head
		£ s.			£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
3	Omagh	4 11/6	28/- to 33/-	31/-	16 0	13 10	12 0	† 1 14	† 1 14	1 2
4	Londonderry	—	25/- to 31/-	31/-	15 5	13 10	—	—	—	—
4	Rathfriland	5 10	27/6 to 32/6	30/-	13 0	12 10	12 0	† 1 12/6	† 1 12/6 } † 1 5	1 7/6
5	Ballymoney	5 10	29/- to 31/-	30/3	14 10	12 17/6	—	† 1 15	† 2 5	1 8
5	Strabane	—	29/6 to 31/-	29/-	14 0	—	—	—	—	—
6	Moy	—	27/6 to 35/-	29/6	14 7/6	10 5	12 5	—	—	—
9	Irvinestown	5 0/9	29/- to 31/-	30/-	15 0	12 0	12 0	† 1 2/6	—	1 7/6
9	Limavady	—	25/6 to 31/6	30/-	16 0	—	—	—	—	1 6
10	Enniskillen	4 15	26/- to 31/-	31/-	15 0	12 0	14 0	—	—	1 15
11	Crossgar	—	29/- to 31/-	—	15 5	13 0	14 0	—	—	1 15
11	Kilrea	4 6/9	24/- to 31/6	30/6	14 10	11 10	13 0	—	—	1 6/6
13	Ballygawley	—	28/6 to 31/6	30/-	14 0	—	12 15	—	† 1 10	1 8/6
16	Camlough	4 0	23/- to 29/-	30/6	14 0	13 10	12 15	—	† 1 12/6	—
18	Lisnaskea	4 2/6	26/6 to 32/-	30/-	14 0	14 0	12 0	—	—	1 12
19	Ballyneahinch	—	29/- to 31/-	—	16 0	14 0	14 10	—	† 1 15	1 15
21	Portadown	5 6/9	28/- to 32/-	30/-	14 0	14 0	15 0	—	—	1 15
23	Fintona	5 10	33/- to 35/-	30/-	15 10	13 5	14 0	—	† 1 12/6	1 8
26	Antrim	6 5	27/6 to 31/-	30/-	18 0	15 0	14 10	—	—	1 10
27	Castlederg	4 15	33/6 to 34/-	30/-	—	—	—	—	† 1 10	1 10
27	Killylea	—	28/- to 35/-	29/6	14 0	—	—	—	† 1 17/6	—
28	Ballymena	5 3/6	21/- to 32/6	—	17 0	17 5	15 10	—	—	1 12/6

* Mountain.

† Downs and Cross.

† Long Wools

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 29th February, 1936, and the two months ended 29th February, 1936, with comparative figures for the corresponding periods in 1935.

(These figures are supplied through the courtesy of the Ministry of Commerce and are subject to revision).

COMMODITY.	IMPORTS.			EXPORTS.		
	Month ended 29th Feb. 1936	Month ended 28th Feb. 1935	Two months ended 29th Feb. 1936	Month ended 29th Feb. 1936	Month ended 28th Feb. 1935	Two months ended 29th Feb. 1936
	Two months ended 29th Feb. 1936	Two months ended 28th Feb. 1935	Two months ended 29th Feb. 1936	Two months ended 28th Feb. 1935	Two months ended 29th Feb. 1936	Two months ended 28th Feb. 1935
Bacon cwt.	1,501	2,366	3,974	23,042	14,845	63,787
Hams "	761	683	1,347	12,451	11,650	26,546
Pork "	—	—	—	5,090	4,675	7,867
Butter "	11,944	15,252	29,453	221	183	455
Eggs gt. hds.	7,622	5,142	16,713	182,710	173,839	340,610
Oat Products (inc. Oatmeal) .. cwt.	1,699	1,747	5,129	7,753	9,137	19,438
Potatoes tons	4	7	15	26,041	12,899	58,097
Poultry cwt.	17	—	84	9,580	9,685	66,102
Grass Seeds "	1,733	9,655	3,212	49,471	47,240	107,724

There were no imports of oats into Northern Ireland direct from abroad during the month of February, 1936, or in the corresponding month of last year.

SHIPMENTS OF LIVE STOCK.

Statement Showing the Shipments of Live Stock from Northern Ireland Ports during the following periods, months of March, 1936, February, 1936, March, 1935, three months ended 31st March, 1936, and 31st March, 1935 :—

PORTS OF:—	CATTLE.					SHEEP.				PIGS.			Horses.	
	Milch Cows		Springers	Calves	Total	Fat	Stores	Lambs	Total	Fat	Stores	Total		
	Fat	Stores												
Belfast	7,012	7,712	1,005	28	—	15,757	734	—	15	749	2,533	—	2,533	358
Larne	9	1,553	—	1	—	1,563	—	—	—	—	798	—	798	20
Londonderry ..	476	7,986	19	33	2,145	10,659	37	—	—	37	275	—	275	9
Newry	65	190	12	3	—	270	—	—	—	—	—	—	—	—
Total, Mar., 1936 ..	7,562	17,441	1,036	65	2,145	28,249	771	—	15	786	3,606	—	3,606	387
Total, Feb., 1936 ..	8,983	15,532	933	80	1,478	27,006	1,522	—	—	1,522	4,217	66	4,283	288
Total, Mar., 1935 ..	6,538	20,552	1,047	82	1,420	29,639	2,611	—	110	2,721	10,783	280	11,063	471
Total Three months ended 31st Mar., 1936	26,259	43,954	3,012	213	4,548	77,986	5,518	—	15	5,533	13,133	67	13,200	1,010
Total Three months ended 31st Mar., 1935	19,755	46,122	3,288	279	2,744	72,188	11,860	—	110	11,970	25,610	1,273	26,883	1,189

Table showing the numbers of Live Stock (1) exposed for sale and (2) sold at 21 fairs in Northern Ireland during the months of March, 1935 and February and March, 1936.

Description of Live Stock.	March, 1935.		February, 1936.		March, 1936.	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ..	7,660	5,641	8,042	5,757	7,834	5,896
Fat Cattle ..	1,613	1,342	2,007	1,868	1,890	1,747
Dairy Cattle ..	1,385	1,081	1,084	894	1,250	937
Sheep ..	423	362	272	207	394	255
Lambs ..	90	90	219	204	180	123
Young Pigs ..	3,306	2,669	3,684	3,041	3,163	2,745

At the principal fairs held during March, the numbers of store and fat cattle were smaller than in the previous month, whilst the supply of dairy cattle recorded an increase. Trade for stores was steady up till the middle of March and for the latter half of the month a keener demand was in evidence. Well-conditioned strong stores, principally bullocks, were in keen request for shipment and smaller stores also made a better trade, prices in all instances showing an improvement on the month. Fat cattle were a slower trade on the whole and prices tended easier. Best quality fat stock maintained late rates but rougher sorts were harder to sell and cheaper. Trade for dairy cattle was on the dull side. Prices for most of the animals which were lacking quality tended lower. Good dairy cattle, chiefly young springing cows suitable for the cross-Channel trade, and nice young heifers for breeding purposes, remained in steady request at late rates. Small supplies of sheep and lambs at fairs last month were in good local request, especially those ready for butchering. Good fat sheep, principally missed ewes, continued to sell well, but a better trade was experienced for hoggets and wedders at satisfactory prices. Towards the close of the month ewes with lambs at foot were on offer and the best made good prices.

There was a smaller number of young pigs exposed for sale during March than the previous month and with a fairly steady demand ruling for suckers a large proportion were sold at fully late rates. Small numbers of sows for breeding were an unchanged trade, but best quality breeding stock were making firmer prices.

This report will be sent free monthly as issued on application being made to the Secretary, Ministry of Agriculture, Stormont, Belfast.

11th April, 1936.

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21 JUL 1936

MINISTRY OF AGRICULTURE.

List of Leaflets and other Publications.

LEAFLETS.

- | | |
|---|--|
| <p>No. 1. Flax Seed, 1936.
 " 2. Improvement of Farm Poultry.
 " 3. Feeding for Egg Production.
 " 4. Marketing of Eggs.
 " 5. The Dishorning of Calves.
 " 6. The Packing of Apples in Standard Boxes.
 " 7. Potato Trials.
 " 8. Seed Testing for Farmers.
 " 9. The Renovation of Orchards.
 " 10. Fruit Tree Pests—Capsid Bugs.
 " 11. Fruit Tree Pests—Aphides and Apple Sucker.
 " 12. Fruit Tree Pests—Caterpillars.
 " 13. Contagious Abortion in Cattle.
 " 14. Cheese-making on the Farm.
 " 15. Suitable Varieties of Fruit.
 " 16. The Feeding of Dairy Cows.
 " 17. Home Bottling of Fruits and Vegetables.
 " 18. Marketing of Dead Poultry.
 " 19. How to Feed Linseed.
 " 20. The Hatching and Rearing of Chickens.
 " 21. The Uses and Advantages of Portable Poultry Houses.
 " 22. Leather-Jacket Grubs.
 " 23. The Handling and Care of Wool.
 " 24. Fluke in Sheep.
 " 25. The Rearing and Management of Young Horses.
 " 26. Ordnance Survey Maps for Farmers.
 " 27. How to Keep Eggs Clean.
 " 28. The Construction of a Laying House for Poultry.
 " 29. The Selection and Breeding of Laying Hens.
 " 30. Coccidiosis in Poultry.
 " 31. Roup of Poultry (Fowl Pox).
 " 32. Spraying Calendar for Apple Orchards.
 " 33. The Pruning of Apple Trees.
 " 34. The Fattening of Pigs.
 " 35. Advantages of Milk Recording.
 " 36. The Raising and Fattening of Turkeys.
 " 37. The Destruction of Charlock.
 " 38. The Production of Clean Milk.
 " 39. The Laying Down and Management of Temporary Pastures.
 " 40. Blackleg, Blackquarter or Quarterill.
 " 41. The Purchase of Balanced Rations for Dairy Cows.
 " 42. Tuberculosis in Poultry.</p> | <p>No. 44. Results of Crop Experiments, 1935.
 " 45. The Breeding and Rearing of Pigs.
 " 46. Hints for Winter Egg Production.
 " 47. The Care and Management of Sheep.
 " 48. Baby Beef Production.
 " 49. American Gooseberry Mildew.
 " 50. Potato Blight.
 " 51. Butter-making on the Farm.
 " 52. Gapes in Chickens.
 " 53. The Breeding and Rearing of Calves.
 " 54. Destruction of Ragwort or Benweed.
 " 55. Identification of Egg Supplies.
 " 56. How to have Eggs of First Quality.
 " 57. How the Fertilisers and Feeding Stuffs Act benefits the Farmer.
 " 58. Bacillary White Diarrhoea (Pullorum Disease).
 " 59. Advantages of Winter Agricultural Classes.
 " 60. The Care and Management of Breeding Bulls.
 " 61. The Production of Timber on the Farm.
 " 62. Sheep—Castration, Docking, Foot-Rot and Care of Feet.
 " 63. The Destruction of Warble Fly Maggots in Cattle.
 " 64. The Packing of Apples in Barrels.
 " 65. Seed Testing Facilities for Traders.
 " 66. The Cultivation of Vegetables.
 " 67. The Cultivation of Strawberries.
 " 68. The Construction of Piggeries.
 " 69. Ringworm.
 " 70. The Cultivation of Raspberries.
 " 71. Tree Planting for Shelter and Ornament.
 " 72. The Propagation and Maintenance of Healthy Stocks of Potatoes.
 " 73. New Pure Strains of Flax.
 " 74. Pig Production and the Pigs Marketing Scheme.
 " 75. Acarine (Isle of Wight) Disease of Bees.
 " 76. Licensing of Milk Producers and Distributors.
 " 77. Graded Milk.
 " 78. The Picking and Storing of Apples.
 " 79. Hoose or Husk in Farm Stock.
 " 80. The Construction of Cow Houses.
 " 81. White Scour in Calves.
 " 82. The Care, Management and Feeding of the Poultry Breeding Stock.</p> |
|---|--|

Any of the above leaflets may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

CIRCULARS.

- No. 1. Phosphatic Fertilisers.
 " 5. Why Pay a Tax on the Horns of Cattle?
 " 8. Basic Slag.
 " 9. Smut in Oats.
 " 10. Purchase of Fertilisers and Feeding Stuffs.
 " 11. Fertilisers and Feeding Stuffs Act—General Summary.
 " 12. The treatment of Liver Fluke.
 " 13. The Ox-Warble Fly.
 " 306. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.

MISCELLANEOUS PUBLICATIONS.

- Store Cattle.
 Reports on Egg-Laying Tests.
 Crop Insurance.
 List of Growers of Certified Crops of Immune Varieties of Potatoes.
 List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
 The Ministry's Monthly Report.
 Register of Premium Stallions.
 Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
 Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated:—

- (1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/- net.
- (3) The Journal of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
- (4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.

